# THE ACCOUNTING REVIEW

Volume XXXVI
1961

Published Quarterly by
AMERICAN ACCOUNTING ASSOCIATION
MADISON

# The Accounting Review

A Glance Backward at Research in Accounting

Riding Herd on Accounting Standards

Accounting Research

Research in Management Accounting by the National Association of Accountants

Report on the Accounting Research Activities of the American Institute of Certified Public Accountants

Research Program of Controllers Institute Research Foundation

Some Facts of Federal Fiscal Life and Their Importance to Thinking Americans

Theory and Research in Management Accounting

Rate of Return: Some Comments on Its Applicability in Capital Budgeting

Overhead Costs and Income Measurement

Depreciation vs. Inflation

"More" on "Income-Tax-Allocation" Accounting

"Direct" Costing for External Reporting

Measurement in Accounting

Executorship Reporting—Some Historical Notes

The Magic Words—"Managerial Accounting"

Management Accounting

Report of the Annual Convention

January
1961

U

V

A
R
A
R

R

R

S

T
R

O
D
"I
"I

M
E
T
M
R

T
P

A
B

the Accounting Review

Editor
R. K. Mautz
University of Illinois



VOL. XXXVI JANUARY, 1961 No. 1



DEPARTMENTS



The Accounting Review is published quarterly in January, April, July and October, at Curtis Reed Plaza, Menasha, Wisconsin.
Subscription price: $5.00 a year, $1.50 a single copy.
Changes of address and items of a business nature, including correspondence regarding advertising, are to be sent to Paul H. Walgenbach, School of Commerce, University of Wisconsin, Madison, Wisconsin.
Correspondence of an editorial nature should be addressed to R. K. Mautz, 218 David-Kinley Hall, University of Illinois, Urbana, Illinois.
Second-class postage paid at Menasha, Wisconsin.

The Accounting Review

VOL. XXXVI JANUARY, 1961 No. 1

# A GLANCE BACKWARD AT RESEARCH IN ACCOUNTING*

RAYMOND C. DEIN
*Director of Research, American Accounting Association*

For thirty years now the American Accounting Association and its predecessor organization, The American Association of University Instructors in Accounting, have had as a primary objective the encouragement and promotion of research in accounting. In this session devoted to current research in accounting, it has seemed to me that it might be instructive to review this rather extended experience with research in accounting. I am not at all sure that the machinery that was devised to encourage and promote research in accounting was adequate, for there was no provision for a paid staff. On the other hand, the original notion of the content and purpose of research in accounting remains eminently sound but less effective than it should have been because it has never been explicitly stated. It is this task of explicit statement of the nature and role of research in accounting that I have assayed for myself in the hope that students of accounting (not accounting students) may thereby be more effectively challenged and channeled into productive effort.

## I

On December 28, 1935, the regular business meeting of the twentieth annual convention of the American Association of University Instructors in Accounting was adjourned and the assembled members immediately reconvened in a business meeting and the members were shifted from the old organization to the new. The only changes that had been effected were the change of name and the adoption of a new set of By-Laws.[1] The change of name seemed important to the officers, for the old name seemed both to limit the membership and the range of items in which it seemed appropriate that the organization interest itself. The officers felt, as Professor Kester stated, that an organization of teachers was "the logical one to carry on organized research in the field of accounting theory," but they also felt that an organization devoted to research should be broadly supported by all those interested in accounting research.[2]

The chief activities of the new Association were listed in the By-Laws as "publications and research." The first of the stated objectives of the Association was phrased thus: "To encourage and sponsor

* This paper was presented at the annual meeting of the Association at the Ohio State University on August 30, 1960.

[1] The By-Laws of the American Accounting Association may be found in The Accounting Review, Vol. XI (1936), pp. 78–79. The Constitution of the American Association of University Instructors in Accounting may be found in The Accounting Review, Vol. VII (1932), p. 79.

[2] "Convention Report," The Accounting Review, Vol. XI (1936), p. 76.

research in accounting and to publish or aid in the publication of the results of research." The By-Laws, of course, specified that THE ACCOUNTING REVIEW was to be continued as one of the means by which the objectives of the Association were to be achieved; the By-Laws, however, envisioned the additional publication of "special studies and results of research" not on a regular basis but "from time to time." The By-Laws included a committee on research among the committees and a Director of Research among the officers. Together the committee on research and the Director of Research were charged with keeping themselves informed upon "research projects in the field of accounting and allied subjects"; and the Director of Research was required to make an annual report to the Executive Committee on these research projects, along with recommendations on any steps the Association might take to further these projects. It was even provided that specific research projects might be conducted under the auspices of the Association, these to be "launched and supervised" by the Director of Research. Two hurdles had to be surmounted before these specific research projects could be got under way: they must be approved by the Executive Committee, and they could be initiated, as the By-Laws stated, only "if and when funds are available." One gets the impression that it was envisioned that research in accounting was considered to be plenteous and ingenious, and that what was needed in large part was simply coordination of effort and provision for the wide dissemination of the results.

## II

Even though as judged by the By-Laws research in accounting was almost the sole purpose of the Association, there was nowhere a definition of research either in terms of its content or its role. The definition must, in consequence, be inferred from the reports and statements issued by the very dedicated Executive Committee during the very active first year of existence of the new Association. One finds disdain expressed for studies which were merely tabulations of instances gleaned from narrow and specialized areas of practice. For example, this statement attributed to Professor Paton was approvingly quoted by the Director of Research in his report to the first convention of the new Association:

> We are not interested in collecting masses of facts for their own sake, but in perfecting the framework within which the accountant operates.[3]

This implies that the purpose of research, to use terminology which is currently popular, was to construct a model which would describe and delimit the things the accountant can and should do. The absence of such a model was also expressly noted by the Executive Committee:

> After a quarter century and more of active discussion and experimentation in this country... (t)here is still no authoritative statement of essential principles available on which accounting records and statements may be based.[4]

This first Executive Committee set itself the considerable task of devising an experimental model the purpose of which was to encourage discussion of the proper content of such a model and to clarify the purpose of financial statements.

> A complete statement of these necessary fundamental principles could hardly be developed over night. In some part, however, they are already established, and as to other questions there is at least a recognition of the problem to be solved.... Possibly the situation requires no more than an effective sympathetic agent to pro-

---

[3] "Convention Report," THE ACCOUNTING REVIEW, Vol. XII (1937), p. 72. See also Miller, Herman C., "Problem of Accounting Research: The Master's Thesis," THE ACCOUNTING REVIEW, Vol. X (1936), pp. 33–49, esp. pp. 36–37.

[4] "A Statement of Objectives of the American Accounting Association," THE ACCOUNTING REVIEW, Vol. XI (1936), p. 1. Hereafter this reference will be abbreviated to "Statement."

duce out of the confusion of accounting controversy the clear crystals of principle which may serve as the foundation.[5]

The Committee warned, however, that no model could accommodate the entire range of accounting practice then current.

The essential of such a statement is that it constitute an integrated conception of the function of accounting as a means of giving financial expression to business facts. It must inevitably embody some conflict with existing accounting practice, since accounting practice is in conflict with itself at a hundred points.[6]

One application of accounting research was deemed by the Executive Committee to occur at the point where choice was to be made between inconsistent current practices.

It must be recognized, however, that simple statements of basic principle will fall short of covering the numerous problems which arise in their application to particular situations. The American Accounting Association expects, therefore, to encourage intensive research work on the many controversial questions of accounting theory which arise and must be met in attempting to express the facts of modern business enterprise. . . . It is hoped that research under competent sponsorship will result in the development of a body of broad accounting concepts and propositions which may prove valid and useful in accounting practice.[7]

The means by which the American Accounting Association expected to "encourage intensive research" on accounting subjects was never fully faced. The Executive Committee did suggest a substantial, but very general, list of topics on which it was felt study was needed.[8] It is quite evident that the master's and doctoral programs in accounting were looked upon as a source of research talent and effort which was readily available in quantity. It is interesting to speculate (but I shall not do it here) why the advanced degree programs in accounting have not produced the advances in accounting theory that the Executive Committee had apparently expected.

## III

Let us now consider the source of the demand for a model expressive of the ideal that "a corporation's periodic financial statements should be continuously in accord with a single coordinated body of accounting theory."[9] The Executive Committee itself noted that opinion was far from unanimous that there either could be or should be such a model. For example, the instance was cited of "many prominent and able accountants" who believed that improvement in financial statements was desirable but that "the only practicable means of improving is the slow, evolutionary process involving persuasion and example through which the worst accounting practices may be gradually eliminated."[10] The Executive Committee did not argue, as it might, that the notion that improvement was possible implied that criteria for gauging improvement could be formulated; instead, the Committee argued that the importance of the business enterprise to the social fabric was such that no considerations were relevant which unnecessarily deferred reporting as accurately and understandably as possible on the contribution of business enterprises to the economic system.

It is impossible now to escape the social implications of large scale business enterprise. Its affairs are matters of public, as well as private, concern. Public accounting must, therefore, assume a full responsibility for the preparation of sound and informative reports on the operations of business, or await the time when the alternative of rigid governmental control of such matters will become an established fact.[11]

In short, business enterprise must im-

---

[5] "Statement," *loc. cit.*, p. 3.
[6] *Ibid.*, p. 3.
[7] *Ibid.*, p. 3.
[8] *Ibid.*, p. 3.
[9] "A Tentative Statement of Accounting Principles Affecting Corporate Reports," The Accounting Review, Vol. XI (1936), p. 188.
[10] "Statement," p. 2.
[11] *Ibid.*, pp. 1–2.

mediately realize that it was burdened with the obligation of reporting upon the manner in which it had acquitted itself as a part of the social structure. Accounting reports were a part of this reporting mechanism. The range of the data encompassed in these accounting reports and the necessity for faithfulness in the reporting that was done made it necessary, as the Committee expressed it, that "there should be a definitive, understandable explanation of what a set of accounting statements purports to signify."[12] The pressure upon business enterprise to report achievement made imperative the construction of a model for accounting reports which could be uniformly applied.

The preceding quotations have made frequent reference to "controversial accounting questions." The fact seems to have been that accounting literature had, up to perhaps 1930, been preoccupied with the discussion of what was called the "sound accounting treatment" of many diverse business situations. But without any conceptual model to determine "soundness" there was virtual anarchy. Howard Greer once observed in retrospect that the feeling had developed "that accounting presents so many possibilities that it is impossible to select any one treatment as acceptable to the exclusion of the others."[13] It is not a little ironical that shortly after 1930 the expression became common (even to being incorporated in the auditor's opinion) that there were "generally accepted principles of accounting," thus implying that there was a model by which "general acceptability" could be tested. What these "generally accepted principles" were was, indeed, a matter of considerable disagreement. This being the case, it was indeed difficult to determine what should be the content of accounting courses. In his presidential address to the Association in 1932, Howard Greer had gently chided the accounting teachers for what they were doing:

> We have been disposed to work largely from existing commercial practice and existing public accounting practice. We have been imitative in many cases where we might well have been constructive; we have borrowed many of our principles from experience rather than from reason.[14]

One of the "two broad divisions" of the work of teachers of accounting, Howard Greer asserted, was the

> active promotion of research in the accounting field—the determination of sound principles and practices, and the formulation of ideals which should guide all those engaged in the application of accounting to economic and social problems.[14]

And while accounting textbooks presumably reflected existing public accounting practice it is not altogether clear how anything like a preponderance of opinion among even the skilled practitioners could have become known to the textbook writers. Moreover, the early experiences in the Securities and Exchange Commission lent powerful support to the opinion that such a preponderance did not restrain if indeed it did exist.[15] In addressing himself to what he called "the relation of accounting to socioeconomic problems" Eric Kohler, in his 1936 presidential address to the Association, made a vigorous plea for more active participation by accounting teachers in the development of accounting theory:

> I hope that accounting instructors will come to recognize that the difference between the

[12] *Ibid.*, p. 2.

[13] In "Foreword" to Paton and Littleton, *An Introduction to Corporate Accounting Standards* (American Accounting Association, 1940), p. vi.

[14] Greer, Howard C., "The Present Status of Teaching Accounting," The Accounting Review, Vol. VIII (1933), p. 62.

[15] The Chief Accountant of SEC had written that "an examination of hundreds of statements filed with our Commission leads one to the conclusion that aside from the simple rules of double entry bookkeeping, there are very few principles of accounting upon which the accountants of this country agree." Blough, Carman G., "Need for Accounting Principles," The Accounting Review, Vol. XII (1937), p. 31.

theory and practice of accounting lies principally in the expedients which practitioners are prevailed upon to adopt in the interest of prompt disposals of cases. I hope that instructors will look forward to the reduction of the frequency with which these expedients are adopted, and that they will not be misled into thinking that good judgment based on mature experience necessarily offers the most effective safeguard to the profession, especially where that experience is born of daily compromises with good theory.[16]

In one sense, the relation between a business enterprise and its creditors and stockholders is a quite personal one—and this indeed lends credence to the view sometimes expressed that to impose uniform reporting is undesirable and unnecessary. In another sense, the regular report upon the net income of the enterprise at regular intervals throughout the life of the enterprise is fraught with broad social consequences. The Executive Committee had succinctly stated its conclusion with the observation that "accountants can hardly limit themselves to comment on the statements prepared by business executives for their own purposes."[17] What was at issue was much more than the rearing of standards for the use of public accountants, although that was of course involved; what was being sought was a model by which periodic net income should be ascertained and on the basis of which public policy as respects the business sector might be evaluated or modified. How very broad was the function of accounting in our society as envisioned by the Executive Committee is at least suggested by the three remaining objectives (the first was quoted very early in the paper) of the Association.

4. . . . to demonstrate the social benefits of a more widespread knowledge of accounting.
3. to promote studies of accounting as an agency of control of business enterprise and economic affairs in general.
2. To develop accounting principles and standards, and to seek their endorsement or adoption by business enterprises, public and private accountants, and governmental bodies.

One might almost say that the case was made, not that accounting was a profession, but that it was a study and a discipline that was truly a social science.

## IV

The development of a conceptual model has, I think, proceeded much more slowly than was originally expected by the architects of the American Accounting Association. This has not been due, however, to demonstration that such a model cannot or should not be contrived. There has, instead, been considerable indifference to the development of the model. Our textbooks have continued in the tradition of treating the content of accounting as lying largely in the domain of satisfying the internal record-keeping and information-flow requirements of management.[18] Some attention has been given to the systematic development of adequate internal controls and budgets (models, to be sure) but the treatment of income and other financial reporting continues to be rather haphazard and unsystematic. In this, the textbooks have largely been reflecting what has appeared in the literature. It is, I think, significant that neither Professor Gordon nor Professor Pierson[19] recognize from their study of the announced purposes of accounting courses that the study of accounting is warranted for any reason

[16] "Convention Report," THE ACCOUNTING REVIEW, Vol. XII (1937), p. 70.

[17] "Statement," p. 2.

[18] Most textbooks define accounting in the operational sense in which it was defined in Accounting Research Bulletin 9, published in May, 1941: "Accounting is the art of recording, classifying and summarizing in a significant manner and in terms of money, transactions and events which are, in part at least, of a financial character, and interpreting the results thereof."

[19] Gordon, R. A., and Howell, J. E., *Higher Education for Business* (Columbia University Press, 1959); Pierson, F. C., *The Education of American Businessmen*, McGraw-Hill, 1959).

other than the operational one as an instrument of management in making its day-by-day decisions. These two authors and critics do not recognize that business management has the broader obligation rooted in our social and economic fabric to give a report couched in monetary terms of the impact of the business enterprise on society. Nor do they appear to be aware that accounting is the only discipline that supplies such vitally useful (but somewhat unprecise) information on the periodic net income of business enterprise. It may be noted in passing that for several years now the American Accounting Association has maintained two task committees, one (accounting theory) concerned with the model for external reporting, and the other (management accounting) concerned with the models for internal administration.

On the other hand, our literature has not been devoid of suggestions that imply that models point the way for proper developments in accounting. We have been chided for computing net income without having formulated a theory of income—this presumably because some economists have evolved such a theory, though there are respectable economists who have expressed doubts about the usefulness of a theory of income. And there are accountants who state or imply that the net income that the accountant computes should conform as closely as possible to "economic income," as though economic income were as standardized a notion as the weight of a gold dollar. Then there are accountants who argue that the periodic charge for depreciation should measure "economic depreciation" though micro-economic models have built into them assumptions which cannot accommodate a periodic charge for depreciation. Other accountants tell us that periodic depreciation charges must reflect the "true" cost of using an asset, yet Mr. Justice Brandeis summarized the "truth" of the matter thirty years ago when he wrote that

> an annual depreciation charge is not a measure of the actual consumption of plant during the year. No such measure has yet been invented.... There is nothing in business experience, or in the training of experts, which enables men to say to what extent service life will be impaired by the operations of a single year....[20]

Economists have often criticized the accountant's definition of cost. It may indeed be that our definition does need revision, but the revision should be made because our model logically dictates the change, and not because a model from another discipline requires a different definition of cost to make that model operational.[21] It might even be postulated that the demands of various models from economics for quantification (with their attendant criticisms) have served to dampen the desire for comprehensive model building for income and financial reporting by accounting. Model building is apparently an exercise about which we accountants are generally badly informed, and to which more attention should certainly be given.[22]

At this point it may be well to recognize a stricture imposed by the Executive Committee upon model building—i.e., a single model was envisioned ("a single coordinated body of theory"). Accounting might well emulate the mathematicians

[20] *United Railways & Electric Co.* v. *West*, 280 U. S. 234, 262.

[21] Some criticisms made by "managerial economists" seem to imply that the function of accounting is to quantify their models. These economists often imply that all unit cost calculations made by accountants are identical (and defective). It is interesting to note that in two recent models developed in writings of economists, the unit cost calculations of accountants meet with more than usual approbation. See Baumol, William J., *Business Behavior, Value and Growth* (New York: The Macmillan Company, 1959); Walters, A. A., "The Allocation of Joint Costs with Demands as Probability Distributions," *American Economic Review*, L(1960), pp. 419–432.

[22] See particularly Devine, C. T., "Research Methodology and Accounting Theory Formation," The Accounting Review, Vol. XXV (1960), pp. 387–399.

and grant that there may be a number of acceptable models, the validity of each to be tested by logic. It is my understanding that one of the non-Euclidean geometries differs from Euclidean geometry only in the definition of parallel lines. Neither system is considered "more right" than the other. The fact seems to be that each geometry offers a better explanation of some phenomena of the physical world than does the other, and that each has produced useful results. This notion might well be applied in the area of price level adjustments, for example. We are all aware that reputable accountants have asserted that income statements which embody generally accepted principles of accounting were grossly misleading because substantial price level changes had occurred. The criticisms of conventional accounting arise from several sources: some are borrowed from statistics and economics; some represent a conviction that conventional accounting practice operated to make the income tax more burdensome on some businesses than others. It is one question whether the model which adjusts bargained exchanges for price level changes is thorough-going and logically constructed; it is a quite different and unrelated problem whether the model gives useful or credible results.[23] All too often, I fear, the criterion for the admission of data into our accounting system has been whether we are ingenious enough to contrive an equality of debits and credits rather than whether there is compatibility with the model and consistency in treatment of data.

Finally, a word should be said about the penchant in accounting for edicts which have the support of "authority." In the previous discussion there has not been much occasion to refer specifically to individuals, for they have become anonymous within the committee. A committee report represents a consensus (and a consensus is often useful) but the report usually does not disclose the compromises and the sacrifices of logic which may have occurred in the process of arriving at a consensus. It has always seemed a bit incongruous to find "authoritative" pronouncements of a Committee on Accounting Procedure supplanted by other similarly "authoritative" pronouncements of a later Committee. Similarly, there have been four distinct models proposed by different committees of the American Accounting Association, but no model has achieved overwhelming support. One wonders whether the committee approach is really the way to get progress in accounting. If one looks at our sister discipline, economics, where model building has flourished and progress has certainly occurred, one hardly finds support for model building by committees that are commissioned by an organization to set forth a consensus. We need to develop our own Alfred Marshall, Pigou, Chamberlin, and Keynes. Model building and model testing (the realm of accounting research) have been exercises that have commanded the efforts and attention of too few accountants.

In conclusion, it appears to me that the original notion at the time of the founding of the American Accounting Association was sound that accounting research and and the development of accounting theory should develop together, and each strengthen the other. What was overrated was the capacity or the inclination of students of accounting to proceed in a quite unmarshalled fashion to produce results that could be fitted together into a single model. Models which are developed must be extensively tested for applica-

[23] An example of this type of model building is Henry Sweeney's *Stabilized Accounting* (New York: Harpers, 1936). Mr. Sweeney is wrong, however, for criticizing so vehemently models which do not contain price level adjustments.

bility and logical consistency, and this is the role of accounting research. This is basically exacting and important work, which requires both patience and ingenuity. I can only at this time extend to you the same invitation that Professor Littleton extended to this convention on December 28, 1936—"an invitation to every one of you to take up the challenge and engage actively in the unending task of capturing our (e)lusive ideas and clothing them in the best phraseology of which we are capable."[24] What we desperately need in accounting is "the authority of ideas" rather than "an authority of committees."

[24] Convention Report, THE ACCOUNTING REVIEW, Vol. XII (1937), pp. 72–73.

# RIDING HERD ON ACCOUNTING STANDARDS*

HERMAN W. BEVIS
*Partner, Price Waterhouse & Co.*

THE general topic for this session, "The Future of Accounting," is so broad that time permits discussion of only some one aspect of the subject. A good place to start is with the unsolved problems of the present. Certainly one of these is a proper perspective with regard to the determinations of, and compliance with, appropriate accounting standards.

Some public comments appear to come quite close to advocacy that uniform accounting standards in some degree of detail be imposed on all businesses. Important advantages, it has been claimed, would result. If the proposition were as easy as it sounds, and were free from serious disadvantages, one could properly question why it had not been achieved long ago.

The course toward uniformity is, however, neither simple nor obvious. Quite aside from the enormous practical problems of definition, we must consider whether uniformity would help or hinder adjustments to new conditions. We are living in times of rapid change. Scientific developments are influencing the economy at an ever faster rate, and the future threatens to arrive before we are ready for the present. The accounting profession must improve its ability to adjust to the needs of the times.

It is also pertinent to examine whether the super-regulation implied by any extensive degree of imposed uniformity is compatible with the very foundations of our free enterprise system.

## *The Framework*

In examining the question of accounting standards, uniform or otherwise, it is necessary to consider the fundamental nature and purpose of accounting. I start with the broad definition of accounting as the measurement and communication of financial and other economic data. Its end product is information. The end purpose of this information is to assist someone in formulating judgments and making decisions. Thus, it is important always to bear in mind that *usefulness* is inherent in the full discharge of the accounting function. Accounting is not an art that is practiced for its own sake.

Communications of economic data generated in any one organization may be for internal, or for external, purposes. This discussion deals only with financial reporting to external persons, and of all the organizations which do this—government, institutions, associations, businesses—is further limited to those which are profit seeking.

Since we are not dealing in a realm of natural, universal "truths," data must always be measured and communicated in accordance with a set of man-made standards. Frequently there is more than one logical way of treating any given data, depending upon whose logic is employed. Of course, custom or other forms of consensus may favor one over others in some situations. Be that as it may, whenever the particular standards used by the issuer have a significant effect, it is important that they be understood by the user. In other words, information about standards used is an important part of the communication process.

* I have deliberately chosen this word "standard" to avoid having to choose among several which are more commonly used, such as, "principle," "procedure," "practice," "policy," "method," etc. Understandings as to the meaning of these latter seem to vary widely in practice.

This paper was presented at the annual meeting of the Association at The Ohio State University on August 31, 1960.

Standards used in the measurement and communication of data must be practicable for the issuer and useful to the user. They must be practicable in that, providing always that the acccountability requirements of stewardship are met, they must be capable of being applied without undue effort and delay by the issuer in originating the data. In other words, the benefits of the information must be at least as great as the cost—it being clear that benefits are often proportional to timeliness. As to usefulness, the standards must result in communication of data addressed to the users' informational needs and capable of being comprehended by the knowledgeable among them.

In tracing the role of standards for the measurement and communication of economic data, we have confined the parties at interest to two: the issuer, and the user. Note that the accountant does not appear as a principal at all. It may be well, then, to devote some attention to the nature of these issuers and users.

*Types of Issuers of Economic Data*

At a superficial glance, it might appear that uniform standards for financial and other economic data might be developed for all issuers as one body. Unfortunately for this line of thinking, there are important differences among businesses which can have pronounced effects upon the accounting standards which may be appropriate for them. These differences (other than the obvious ones turning upon the natures of operations) could probably be set forth in various ways. Here are two important ways of distinguishing their characteristics:

First, one might classify issuers *according to freedom to establish selling prices, or to recover from revenues all types of costs and expenses incurred.* Categories of companies which would be affected differently by these factors would include:

Regulated utilities.

Companies supervised to a certain extent, such as banks and insurance companies.

Suppliers to the government where allowable contract costs are a factor in determining selling prices.

"Captive" suppliers to companies substantially larger than themselves which also sell on something approaching a cost-plus basis.

Other companies, shaded according to their relative competitive positions in their markets.

The extent of freedom in the described areas can have an important bearing not only on the income statement, but also on the bases for stating and classifying assets and liabilities (or even including them at all) in the balance sheet. For example, standards for balance sheet treatment of certain costs in property or inventory accounts, or credit amounts, as fairly carried to the income accounts of future periods, may properly be different among the several types of businesses enumerated. The problem is further complicated by the fact that many complex companies have portions of their business falling in two or more of the categories enumerated, which suggests that different standards may be appropriate for the same item in the same company.

Secondly, many accounting standards rest heavily upon an *assumption of permanence* of the organization issuing accounting data. In actual practice, the probable validity of this assumption ranges from less to more in the following categories of users:

Small businesses, particularly those under-capitalized or otherwise not well established.

Any company, large or small, with a record of losses and with unsure prospects, particularly those with an appreciable amount of debt. (Mention of debt introduces another variation—the fact that an assumption of permanence of *relationship* may differ as to equity and creditor interests while, at the same time, the "going concern" assumption for the enterprise as a whole is reasonable.)

Companies with a well-established competitive position, and an effective research program to help maintain that position.

Companies the continuance of which involves a high degree of public interest, such as utilities, a major supplier of a product or service essential to the government, or an economic institution the demise of which would be an unsettling factor in the economy of an area, region or even the entire country.

Some accounting standards might preferably differ, for example, between the electric utility serving a huge metropolitan area, and the new electronic company whose whole future depends on its research. Within the same company, do not—and should not—accounting standards *for the same type of transaction* differ, say, between the operation in the United States and that in any foreign country where there is a high degree of economic and political uncertainty?

Looking at issuers alone, then, one encounters diversity bearing upon appropriateness of accounting standards. Let us now examine the users of economic data.

*Types of Users of Economic Data*

Financial reporting must take cognizance of the needs of the recipients, or it has not fulfilled the full measure of its usefulness. These needs vary widely: the interest of the banker in the "pounce" value of assets is substantially different from those of the regulatory body or taxing authority; and these, in turn, still differ from that of the investor in equity securities. One might classify external users of economic data into a number of groups, including the following:

*Owners and prospective owners of equity* constitute a broad group of users of financial and other economic data issued by profit-seeking businesses. This group, perhaps, is the one most frequently thought of in connection with financial reporting, but even it is anything but homogeneous. One way of subdividing the group would be according to closeness of identification with the enterprise, such as:

Owner-managers.

Corporate owners of a substantial percentage of equity interest.

Other managing and nonmanaging holders of substantial nonliquid interests.

Stockholders of listed and registered companies whose shares are readily marketable.

Another grouping might be according to present intention as to the duration of the investment, such as:

Speculators.

Long-term investors.

Owners intending to sell whole companies.

Prospective buyers of whole companies.

A third possible means of subdividing the owners of equity might be according to the nature of the investor, such as:

Individuals.

Mutual funds.

Institutional investors.

Pension and welfare funds.

Other corporations.

While many of these groups of equity owners have needs for information and preferences as to accounting standards in common, there are sufficient differences to warn against complacent assumptions of homogeneity.

*Creditors*, another group of users of financial and other economic data, range from short-term to long-term and their interests might vary accordingly.

*Labor* might be considered still another group among users of financial data which could well be interested both in the type of data supplied and in the standards by which it is compiled. Labor's interest in these respects might also differ, however, according to whether it is opportunistic, or a "partner" interested in perpetuating an enterprise on a sound basis which is fair to it.

A fourth group among users of economic data would be *government*. In subdividing this broad field, one might list categories of

recipients of financial reports with widely different interests, such as:

- Taxing authorities.
- Regulatory authorities, such as for public utilities, railroads, airlines, etc.
- Supervisors of depositaries, such as for banks, insurance companies and savings and loan associations (sometimes government has the added function of guarantor).
- Customers, as in military procurement.
- Those governmental functions attempting to act as economic stabilizers or stimulants under adopted national policies.

Some users have established standards for measuring and reporting some portion, or all, of the data which they need as, for example: taxing, regulatory and supervisory authorities; the military services; trustees of bondholders, through indentures; buyers and sellers of businesses; and parties to construction contracts. In some cases, the custom-devised standards tend to be comprehensive. In others, they modify only in specified respects the issuer's own standards. Some users are powerful enough in relation to issuers, and consider the matter of sufficient importance, that they have actually required the issuer to depart from standards which he otherwise would have chosen for measuring and communicating data—not only to themselves but to other parties as well.

Now, it is probably fair to say that each issuer of data has its own personality, as does also each user. This might suggest that each issuer agree with each separate user of its data on the standards for measurement and communication. However, this is manifestly impracticable and the foregoing enumeration of some of the differences among issuers and users was not made for the purpose of advancing such a solution. What the analysis *does* suggest are these two points: that penetrating research is required to support accounting standards advanced for any degree of widespread use; and, second, that any standards which are so proposed should always be accompanied by a definition of the groups for which they are intended. This has not always been made clear, for instance, in bulletins issued by the AICPA Committee on Accounting Procedure.

Thus, part of the problem is: which standards, for which issuers, for which users?

### *Problems of Imposing Uniform Standards*

Assuming that certain standards have emerged as appropriate for widespread use, a second part of the problem emerges, namely, shall they be forced upon the issuers, and, if so, how? Profit-seeking organizations are units of a free enterprise system, only a few groups within which have any portion of their accounting controlled by external legal forces through regulation or other supervision. Even the federal income taxation law, to which all the businesses under discussion are subject, provides that taxable income shall be computed by methods of the taxpayer's choosing (with imposition of the Commissioner's method under certain circumstances *as the exception*). And the SEC, which has jurisdiction over certain of the reports of a group of companies relatively small in number but great in importance, has wisely confined its requirements to full and fair disclosure with only a minimum of prescription of accounting standards to be uniform for all.

Statutory and administrative law give force to such standards as have been imposed by agencies regulating utilities, the supervisory agencies, the Renegotiation Board, the taxing authorities and similar governmental units. A few standards—not many—derive from other laws.

Of course, the future could see standards imposed upon all issuers through additional laws regulating all of industry along

the lines of a socialized nation. Whether or not the individual accountant might consider this preferable to the existing free enterprise system of this country (which I, for one, do not), in considering legally imposed accounting standards of the future it seems best not to assume that extensive uniformity will be mandated by regulatory law.

Incidentally, where any of the standards deriving from government sources have been sweeping, even for issuers presumably rather homogeneous, three lessons have been learned: first, the standards always fail to provide comparability in many important details; second, the more extensive and detailed the prescribed standards, the more exceptions and loopholes and the more difficult the enforcement; and third, inflexible standards which are continued after change in the conditions for which they were once suitable can commence to hide a state of affairs, rather than fairly reflect it.

On the last point: a shift in emphasis from the balance sheet to the income statement occurred for most financial reports decades ago, but is considerably short of accomplishment in industries discharging depositary functions. Much of the lag can be attributed to the influence of the governmental supervisors, whose principal objectives are to safeguard the interest of the depositors. This concentrates attention on asset valuation, reserves, liquidity, margin of safety, and other aspects of the balace sheet, rather than the reporting of income to the investor.

The other external force (beside the authority of the law) which can cause an issuer to change or adopt a standard is custom. The appeal of conventionality, of conformity, seems to be growing, particularly among managements of public corporations. In this area professional accountants may be helpful in reporting custom or consensus along with an analysis of the basic underlying forces. But it must be remembered that such a role is advisory, not regulatory.

Incidentally, it is appropriate to take note here of the ideas that the resources of the American Institute of CPAs should be utilized to determine what are acceptable accounting standards and that the weight of its authority should be invoked in enforcing them. There is, of course, every reason why members of the Institute and of the American Accounting Association should assist in articulating standards in general use, in formulating tentative standards for new situations, and even become driving forces toward these ends. However, any illusions as to the extent of authority of the Institute to impose them upon issuers should be quickly dispelled. The Institute's direct authority runs only to those CPAs who voluntarily choose to take membership in it, and this does not even include all CPAs. It has no authority which runs directly to the issuers of accounting data, although its influence is increased to the extent of reliance placed by the SEC on Institute bulletins.

Another unifying influence in some industries has been the trade association. The members of an industry through their trade association have recommended in some instances certain standards as appropriate for financial and statistical data of the industry. Such voluntary steps toward greater uniformity should be encouraged and assisted by professional accountants, particularly for problem areas peculiar to an industry.

To summarize this point, some accounting standards have been introduced under authority of law and some by agreement or custom. However, procedural standards *in any detail*—certainly for data to nongovernmental users—remain largely determined by individual issuers within allow-

able tolerances which can, for some areas, be rather wide.

Before leaving the subject of externally imposed standards, brief reference must be made to one phase which deserves a whole treatise by itself—the practical problem of definition. Great obstacles exist here. Consider for a moment, for example, the relatively simple matter of fixed assets. In a uniform system would one catalog of property units be applicable to all businesses in the United States? If not, how many would be needed for different industries and different sizes of companies? What detailed rules for capitalization of overhead expenses and for depreciation would be needed? How can this be done across the board? And if it were done, would the uniform reporting, suggesting as it would a uniformity in underlying conditions be *better* reporting? George O. May likes to illustrate the point by the example of a freight car, which, having been wrecked and rebuilt, bears either its old number or a new one, with the accounting varying greatly according to the choice made.

### *Accepting Reality and Dealing with It*

While accountants should make their contribution toward standards acceptable in similar situations for homogeneous groups (and this could be all that those who call for greater uniformity are suggesting), it should be obvious that diversity will continue to be more characteristic than uniformity in any beyond the broadest areas while our free enterprise system continues. Accountants, therefore, would be misguided if they did not continue to devote attention to useful financial reporting where accounting standards are diverse. The fact of the matter is that present-day financial reporting *is* useful and that this is not happenstance. Those who dwell upon illustrations of inconsistency between companies and reason from these that present-day financial reporting ranges from the useless to the misleading exhibit something considerably less than the balanced judgment of a professional man.

In connection with maintaining a practical, professional attitude toward accounting standards of the future there are these seven points which, it seems to me, accountants should bear in mind.

*First*, standards which an issuer devises within acceptable limits as appropriate in its situation are not necessarily self-serving, and injurious to outside interests. In fact, the issuer has an *obligation* to exercise judgment here as a part of its stewardship. It seems the fashion these days to brand with suspicion, as adverse to the public interest, internal decisions and policies of "business" while at the same time warmly endorsing our system of free enterprise. Some businesses and businessmen are the extremists which will be found in any group, but they can and should be dealt with in the individual case rather than by blanket indictments directed at all business. Certainly, accountants (trained, as they are, in objective determinations) should not fall into loose thinking in this regard. Standards are not necessarily bad because they are issuer-created.

*Second*, continual emphasis should be given to the vital principle of full and fair disclosure. This is not new, but seems occasionally to drop from sight. This was recommended by the Institute to the New York Stock Exchange, and to the SEC, in the early 1930s. It has never been fully developed. There is room for a great deal of improvement in the degree to which issuers describe to users of data those standards used which have an important effect on the data communicated. Without engaging in distinctions between principles, policies and practices, *any* of these which affect the data to an important

degree and which might be different among issuers might well be disclosed.

*Third,* there should also be continual emphasis on the strong safeguard to meaningfulness of data deriving from consistency in the application from one period to another of standards chosen by an issuer. The principle became vital with the shift of emphasis from the balance sheet to the income statement and, at the present time, results in far greater comparability of income among companies than some would have the public believe. This can and should be demonstrated in actual cases by accountants as reassurance to users of data.

*Fourth,* the Institute should clear up what appears to be some current confusion about the meaning of the phrase "generally accepted accounting principles" as used in the short-form opinion. Are the "principles" referred to few and broad, or many and detailed? Do the words "generally accepted" refer to the one—the only—way, or to a foundation in theory and in use of a standard chosen, perhaps, from among many? I suspect that the original meaning of the phrase has been twisted by time, and believe that the new Accounting Principles Board should straighten it out quickly. Furthermore, to the extent that future bulletins and other pronouncements are intended to enumerate "principles," they should always be accompanied by identification of the classes of issuers and users to which they do not, or do, apply,

*Fifth,* professional accountants should devote more attention than at present to accounting standards imposed upon issuers by taxing, regulatory, and other governmental users of data. Some of these standards are being imposed on the grounds that they are sounder than those of the issuer where, in reality, they are designed solely to further the objectives of the governmental unit.

No one would deny the government the right to have data—say, net income—measured and communicated to it in such manner as best to effectuate approved public policy. But professional accountants should be alert to distinguish for all concerned between standards designed to this end and those appropriate for other users of the same issuer's data. Above all, if the governmental agency is under illusions as to the appropriateness of its standards for other purposes, when this is not the case, accountants have an obligation to assist in the required clarification.

*Sixth,* accounting research and thought should be concentrated on fundamental and widely pervading factors which have a bearing on standards appropriate for many issuers and many users. There will probably not be many of these, but such as there are will be of far greater importance than the details with which accountants sometimes are prone to concern themselves.

For example, is there, or is there not, general agreement among the various elements of our economy that financial reports should show the extent to which the economic capital of the issuer has or has not been preserved? If the answer to this were clear, many of the standards for accounting during a changing price level would be easier to establish.

Take another example: it is national policy to minimize fluctuations in the economy. Do widely used accounting standards conform with this policy? Straight-line amortization of any asset against income tends to accentuate fluctuations in an issuer's net income. On the other hand, amortization by units of production or other bases which vary with the volume of operations tends to minimize them. Is rethinking required here?

Selection of subjects of sufficient depth and breadth to be appropriate for research

and pronouncement will, I believe, be one of the most difficult problems of the new Accounting Principles Board.

*Finally*, a realistic solution to reasonable demands for more comparability of data should be developed. The first step here is to distinguish which pressures are susceptible to practical solution. Then, where reasonable common standards can be developed, or where they already exist but an issuer desires to break new ground, it may be preferable to press for *additional disclosures* by an issuer to show the effect on data of applying common standards—a "norm"—as compared with its own.

The logic of this approach, as contrasted with attempting to require the issuer to *adopt* the common standard (which, as has been discussed, may be largely impracticable anyway), is that the issuer is left with freedom for innovation while at the same time the request for comparability is met. Freedom for innovation, inviting continued progress in accounting, provides a far sounder base from which to launch into a future almost certain to be characterized by rapid change. It is much better than uniformity imposed by external authority with its accompanying tendency toward regimented stagnation.

In closing, the strongest plea of all that I would make with regard to future determinations of accounting standards is that professional accountants not consider this their exclusive jurisdiction. The accounting profession will have reached its full maturity when it has the humility to recognize that the formulation of standards for the measurement and communication of financial and other economic data requires the effort of a team, of which it is only one of the members. At that point, its stature will never have been higher. The composition of the initial task forces of the Accounting Principles Board is indeed an encouraging start in the right direction.

# ACCOUNTING RESEARCH*

Andrew Barr

*Chief Accountant, Securities and Exchange Commission*

The invitation to participate in this discussion today suggested that each speaker explain current and future research plans of his organization.[1] For my part it seems appropriate to discuss the Commission's interest in the research that is being done in accounting and the extent of our participation in it.

Webster defines research as: "Studious inquiry or examination; specif. and usually, critical and exhaustive investigation or experimentation having for its aim the discovery of new facts and their correct interpretation, the revision of accepted conclusions, theories, or laws, in the light of newly discovered facts, or the practical applications of such new or revised conclusions, etc.; also, a particular investigation of such a character or a book, article, or the like, presenting the investigator's discoveries; as, to give one's full time to *research;* Pasteur's *researches* in disease prevention."

"What is Research?" is the title of the first chapter in a book devoted to "Research Methods in Public Administration."[2] The author distinguishes research from formalized study of textbooks. Further he notes: "A tendency is sometimes evidenced to regard basic and applied research as distinct and separate activities. Some would even go so far as to assume greater virtue for the former, an attitude which occasionally smacks of snobbish superiority and exclusiveness. The disciples of this cult evidently feel that an immediate utilitarian objective contaminates the research process. However, a realistic appraisal would seem to indicate that basic and applied research are difficult to separate in fact. The recent history of science and industry offers many examples where the improvement of an industrial process has resulted in noteworthy discoveries bearing on basic scientific principles. . . ."

These quotations seem to offer an adequate basis for believing that much of the work of the Commission in review and criticism of financial statements may be deemed to be a form of research in accounting. The Commission's interest in accounting principles and their application, auditing standards, and financial reporting needs no elaboration as effective administration of the Securities Acts demands attention to these subjects.

It is significant, I think, that Commissioners and staff members have cooperated with the American Accounting Association, as well as with the other organizations represented here today, since the earliest days of the Securities Acts. My office files reveal, for example, that Mr. Carman G. Blough, the first Chief Accountant, was a member of the advisory committee on the preparation of "A Tentative Statement of Accounting Principles" and made a number of comments on the draft after consulting with Commissioner Mathews, who was charged at the time with general supervision over accounting matters for the Commission.

Mr. Blough's successors have participated in one way or another in the development of successive statements by the As-

---

* This paper was presented at the annual meeting of the Association at The Ohio State University on August 30, 1960.

[1] The Securities and Exchange Commission, as a matter of policy, disclaims responsibility for any private publication by any of its employees. The views expressed herein are those of the author and do not necessarily reflect the views of the Commission or of the author's colleagues on the staff of the Commission.

[2] John M. Pfiffner, The Ronald Press Company, New York, 1940.

sociation. In addition, Mr. Earle C. King, when Chief Accountant, was a member of the Study Group on Business Income which reported its findings under the title "Changing Concepts of Business Income." More recently the Commission has indicated clearly that it has a vital interest in the work of the Accounting Principles Board of the American Institute of Certified Public Accountants and in the research work of the American Accounting Association.

This is an appropriate occasion to refer to the discussion of consistency in the application of accounting principles which took place at the Fiftieth Anniversary celebration of the American Institute where Mr. Blough responded to a question and said in part:

"As a matter of fact, I think I have emphasized at numerous times that the policy of the Securities and Exchange Commission was to encourage the accountants to develop uniformity of procedure themselves, in which case we would follow. We expected to be able to follow the better thought in the profession and only as a last resort would the Commission feel the necessity to step in."[3]

These remarks were made a few months after the Commission "announced a program for the publication, from time to time, of opinions on accounting principles for the purpose of contributing to the development of uniform standards and practice in major accounting questions."[4] The fourth release in the Accounting Series, published in April 1938, stated the Commission's administrative policy with respect to financial statements. This series of releases and the instructions as to financial statements found in the various forms reflect the result of much accounting research on the part of the staff and consideration of comments from persons interested in, and also those who are affected by, our work. The original instructions as to form and content of financial statements were prepared with the assistance of experts and in 1940 were reexamined in the same way and published as Regulation S-X, which in turn has been reviewed, amended in part, and extended as conditions required.

The last major revision of Regulation S-X was completed in 1950. Preliminary drafts of the revision circulated for comment included statements on accounting principles which had been expressed in Commission opinions and had been followed by the staff in preparing comments on their review of financial statements. These proposals were severely criticised by many individuals and officially by the American Accounting Association and the American Institute of Accountants. The latter organization sent a special committee to appear before the Commission to urge that our regulations be framed in such a manner as to not interfere with the continued development of accounting principles by the accounting profession and the business community. The Commission agreed, except on one point on which a compromise solution was reached.[5] It was understood at that time that the Institute would accelerate its efforts to narrow areas of difference and inconsistency in accounting practices, and to further the development and recognition of generally accepted accounting principles. This objective of the Committee on Accounting Procedure of the Institute is stated in paragraph 5 of the introduction to the "Restatement and Revision of Accounting Research Bulletins."

Some of our critics say that progress has been too slow, while others say that insistence upon certification in accordance with generally accepted accounting principles is a barrier to progress. At the last annual meeting of the Association many of us heard Mr. Louis H. Penney, the president

[3] The American Institute of Accountants, Fiftieth Anniversary Celebration, 1937, p. 190.

[4] Accounting Series Release No. 1, April 1, 1937.

[5] Accounting Series Release No. 70, December 20, 1950.

of the Institute, answer the question "Why Research?" In his discussion he mentioned the growing pressures from various sources for greater uniformity in statement presentation and observed that it might be a calamity of the greatest magnitude to the accounting profession if some government agency dictated the form and arrangement of financial statements and the principles to be followed in their preparation.[6]

In our work at the Commission we encounter various degrees of competence in accounting as in other professional work. Registrants and professional experts look to our prescribed forms and regulations for guidance. Drafting and revision of these publications requires continued study and, if you please, research. Projects requiring attention now include a general revision of Regulation S-X. This, as I have mentioned, was last accomplished in 1950. Assembling suggestions for a preliminary draft and exposure of the result to expert criticism takes considerable time, so no immediate results may be observable here. These preliminary steps, however, have been taken for a revision of Article 7 applicable to insurance companies other than life and title, and for a new, much needed article for life insurance companies. Similar work is partially completed on financial statements for employee stock investment plans. All this work progresses slowly while the staff is more than fully occupied with an unprecedented volume of business in all areas under the Commission's jurisdiction.

A general revision of Regulation S-X is an opportunity to consider deletion of material which may be obsolete, to clarify those instructions which experience shows may need it, and to consider the substitution of new terminology for old. It is a time when the prescribed form and content of the financial statements must be judged against persistent requests for acceptance of alternate solutions and concurrent demands for greater uniformity. Emphasis in some circles on cash flow reporting suggests that the time may be ripe for prescribing some form of statement of source and application of funds in addition to balance sheets, income and surplus statements.

The Commission's report form for brokers and dealers is in the form of a financial questionnaire and conforms to the requirements of the New York Stock Exchange. Except for a revision in the minimum audit requirements applicable to monthly investment plans, this form has not been changed since 1942. Any revision of this form requires collaboration with special committees of the American Institute of Certified Public Accountants and representatives of the New York Stock Exchange. First steps, however, have been taken.

I have avoided a listing and discussion of problems in the field of accounting principles which require attention, as I am sure these will be mentioned by others on the program. We do want to participate in efforts to solve them.

Commissioner Robert E. Healy addressed the annual meeting of the Association at Atlantic City in December 1937 on "The Next Step in Accounting."[7] Some of the steps he mentioned have been taken. Even our severest critics should agree that much has been accomplished since then. Commissioner Healy's closing sentences are appropriate now: ". . . The Commission will continue to recognize the propriety of the profit motive in our present system, the necessity of industry to acquire capital through the issuance and sale of securities, the impropriety of acquiring that capital, that is, other people's money, by misrepresentation or by anything short of fair and frank disclosure of all the important facts. We shall continue to seek and, when it seems wise, to rely upon the

---

[6] The Accounting Review, January 1960, p. 3.
[7] The Accounting Review, March 1938, p. 1.

cooperation and advice of accountants, lawyers and representatives of industry. We shall try to be honest enough and brave enough to turn back when we discover we are on the wrong track. We ask you to recognize, as we do, the difficulty of deciding many of our problems. We ask you to help us. We want you to write to us and to talk with us, to give us your advice and your ideas. . . . As teachers of accounting, as students, as scientists in this complex business world of ours, your contributions can be of especial value. The task is worthy of the best there is in us. If it fails to bring us much money, let us remember as Emerson told the students at Dartmouth many years ago: 'Truth also has its roof, and bed, and board.' "

# RESEARCH IN MANAGEMENT ACCOUNTING BY THE NATIONAL ASSOCIATION OF ACCOUNTANTS*

WALTER B. MCFARLAND

*Manager of Research, National Association of Accountants*

WHEN the National Association of Cost Accountants was organized 41 years ago, research to expand knowledge of accounting was one of the objectives stated in the Association's constitution. Through the years since that time, research has been a function of growing importance. However, N.A.A.'s research methods and objectives differ somewhat from those of other accounting organizations. The principal reasons for these differences stem from the nature and purposes of the Association.

### *The Field of Management Accounting*

N.A.A. is best described as an educational organization in the field of management accounting. In keeping with its educational character, it recognizes a responsibility for expanding knowledge and understanding of accounting through research. It views management accounting as including all aspects of the development, presentation, and interpretation of financial data for the information and guidance of management at all levels. While there are other types of data utilized by management (e.g. production reports and market statistics), accounting is distinguished from other internal data supplying functions by the fact that accounting data are stated largely in monetary terms while the other data are stated largely in quantitative terms. Those who receive the reports which are the end product of managerial accounting have responsibility for directing their company's operations. This distinguishes management accounting from other fields of accounting which are concerned with reporting financial data to stockholders, creditors, governmental agencies, and to others outside the management group.

Historically, accounting was developed to serve management and until recently financial reports were rarely available to to anyone but the owner-manager. Even today, the number of companies rendering public financial reports is small relative to the total.

The term *financial accounting* is often used as an opposite to *management accounting*, but the terms are not mutually exclusive. Since experience is the principal guide in planning jor the future, the historical financial accounts constitute the basic source of data drawn upon in budgeting and profit planning. In the same accounts are recorded the figures from which the accountant prepares income statements for divisions, plants, and products as well as for the company as a whole. Internal profit measurement is an indispensable aid to management in evaluating performance of individuals and segments of the business. To exclude the financial accounts from management accounting would reduce the latter to a collection of special purpose statistical analyses.

On the other hand, to distinguish the kinds of financial accounting information needed internally from those kinds supplied to external groups opens up a broad and well defined field for research into the internal applications of accounting. The

* This paper was presented at the annual meeting of the Association at The Ohio State University on August 30, 1960.

principles and procedures which govern in management accounting are often distinctly different from those which apply in public reporting. For example

1. External financial reports usually view a business as a single entity and hence consolidated reports are presented. For management purposes, the accountant must recognize varied and often numerous accounting entities in the form of cost and profit responsibilities, segments such as product lines and sales territories, and corporate entities for ownership and control of assets.
2. Rules firmly established for external reporting, such as that against recognition of unrealized income, do not always apply in management accounting. Thus transfers of goods and services between managerial profit responsibilities within a company are often accounted for at market price.

For these reasons, N.A.A. research reports have dealt with many aspects of financial accounting from the management point of view.[1]

*Evolution of Research Program*

The current research program of N.A.A. has evolved from both experience and experiment. In its early years, emphasis in N.A.A. research was placed upon adding to the factual information available about accounting practice of the day. Such studies took the form of surveys covering methods of accounting for manufacturing overhead, finished goods inventories, depreciation, and similar topics.[2] That information about practice continues to be of interest is evidenced by the fact that the reports presenting findings from studies made ten to twenty years ago are still being quoted by writers on accounting.

However, such factual studies often gave the impression that accounting practice consisted of an unordered variety of different methods and procedures. When research was extended to determine not only what practices were being used but also why these practices had been chosen, it was soon found that practices fit into discernible patterns. The key that converted a puzzling diversity of methods into logically ordered picture was the purpose which the practices were intended to serve.[3]

The foregoing observation led to the conclusion that relevance to its intended purposes is the best and perhaps the only test that can be applied to distinguish between good accounting and bad accounting. Since accounting is a practical art which was invented to help men achieve certain aims, it is a means to an end and not an end in itself. To discuss accounting without having the intended ends clearly in mind leads only to confusion.

The word *relevance* is used to describe this test because relevance to a specified purpose can usually be established by objective means. Recent N.A.A. research reports rarely use terms such as *appropriate*, *fair*, or *equitable* because these words reflect

---

[1] See Accounting for Research and Development Costs (Research Series No. 29); Accounting for Intra-company Transfers (R. S. No. 30); Costing Joint Products (R. S. No. 31); Current Practice in Accounting for Depreciation (R. S. No. 33); Management Accounting Problems in Foreign Operations (R. S. No. 36).

[2] See, for example, Practice in Accounting for Raw Materials (March 15, 1937); Practice in Accounting for Payroll Taxes (August 15, 1937); Practice in Applying Overhead and Calculating Normal Capacity (April 1, 1938); Present Day Practice in Accounting for Research and Development Costs (March 1, 1939).

[3] For example, a recently completed study entitled *Return on Capital as a Guide to Managerial Decisions* disclosed that the investment base upon which rate of return is computed is defined in a variety of ways. Inquiry into purposes for which rate of return figures are used provided the following generalizations.

1. Rate of return is based *on assets* for measuring performance of operating management.
2. Rate of return is based *on stockholders' equity* when the purpose is to measure performance of financial management in earning a return on stockholder's investment.
3. Rate of return is based *upon forecasted* cash flows when evaluation of projects involving new capital investment is the objective.

As might be expected, the same company often computes rate of return on different bases according to the purpose at hand.

subjective judgment or individual opinion.

While methods of using factual information have changed, each N.A.A. research project continues to include both an extensive review of the literature related to the subject being studied and a carefully planned field study designed to yield information about practice. The latter step in the research process has been the subject of a number of experiments over the years. Mail questionnaires were abandoned about fifteen years ago and field interviews have taken their place. These are depth interviews, guided by a checklist of questions framed to bring out both what practices are being used and the reasons why these practices have been chosen. Interviewing of this type requires research staff personnel qualified to recognize significant ideas and to evaluate practices in terms of their setting.

However, the collection of information is only one step in a research study. Facts need to be classified, summarized, and their relationships one to another made clear. This process requires a great deal of hard thinking and is usually the most time-consuming phase of research. The major products of such thinking are generalizations expressing conclusions drawn from the research. These generalizations might well be called accounting principles. However, the word principle has many connotations among accountants and it has too often been applied to designate procedural or authoritative pronouncements that are in no sense the result of research. For this reason, the word has been purposely avoided in N.A.A. research reports.

Fully expressed, such generalizations consist of three parts, namely:

1. A statement of the purpose which accounting is to serve.
2. An assertion as to what is true.
3. Reasons explaining why the foregoing statement is true.

Following is an example of a generalization which follows the pattern described above.

Purpose: The control of costs
Statement: Requires classification of costs by managerial responsibilities for control
Reason: Because actions to control costs must be taken at the place and time where costs originate; i.e., within the area of authority where the decision to incur or not to incur a cost is made.

(From *Analysis of Manufacturing Cost Variances*, N.A.A. Research Series No. 22.)

Recent N.A.A. research reports contain many generalizations or principles of this type.

No attempt has been made to develop comprehensive statements of concepts and principles covering the whole field of management accounting because such a statement would have to be couched in terms so broad that they would have little significance. Instead relevant concepts are defined and principles stated for the limited area covered by each individual study. When so restricted in scope, conclusions drawn from research can be definite and specific guides to practice.

N.A.A. research reports are not, however, limited to compactly worded generalizations. Instead, statements as to what accounting practice is or ought to be are accompanied by full disclosure of the evidence on which they are based and of the processes of reasoning by which they are derived. The reader can, therefore, judge for himself as to whether facts have been correctly interpreted and conclusions accurately stated. This practice has long been followed in presenting the results of research in other fields of knowledge. In the absence of such disclosure, statements made are merely unsubstantiated opinions.

In addition, since accounting is a prac-

tical art, research needs to be carried to the point where findings can be put to use. To describe examples showing how this has been done may also assist others in applying the results of the research.

*The Educational Approach to Research*

The approach to research described above reflects the nature of N.A.A. as an organization which does not regulate nor prescribe the accounting methods of its members or make pronouncements as to what constitutes acceptable accounting practice. If the conclusions drawn in research studies prove useful, it may be expected that they will receive acceptance on their merits and will influence accounting practice. Observation over a period of years seems to show that they have had a great deal of influence on practice.

However, this is not to say that authoritative pronouncements on accounting practice do not have usefulness. There are virtually always alternative methods for accomplishing a purpose whether this be the design of bolts and nuts or of accounting procedures. For this reason, it is often desirable to specify what practice shall be accepted as standard. Within a company, standard accounting procedures are established by management. It is still necessary to consider what is effective and economical for the purpose, but otherwise management is free to follow the practices it prefers in the internal use of accounting. On the other hand, external reports must conform to standards established by governmental agencies and other bodies which have authority to prescribe what accounting practice shall be used in preparing reports they receive or for which they accept responsibility. While the choice of standards may be guided by research, standards are established by authoritative action and not by research.

Unlike methods and procedures, accounting concepts and principles are not subject to standardization. Each purpose has its own set of concepts and principles, but these concepts and principles are not alternatives.

The relevance of concepts and principles to their intended purposes is established by research. In contrast, there are virtually always alternative methods and procedures for implementing a given principle and it is necessary to decide which method is to be accepted as standard.

*Organization for Research*

In its organization for research N.A.A. employs both committees appointed from the Association's membership and a staff whose members are full time employees of the Association. The determination of research policies and selection of studies to be made is assigned to a research planning committee, subject to approval by the National Board of Directors. Studies are carried out and reports are written by the research staff. A separate project committee is appointed to advise the staff in its work on each study and to review drafts of reports presenting findings and conclusions. In its review of a draft, the project committee does not determine what conclusions shall be drawn. These rest upon the evidence and reasoning presented and do not necessarily reflect opinions of members of the committee. When it is the consensus of the project committee that a report merits consideration, publication is recommended.

N.A.A.'s research program is financed by income from a research fund plus revenues from sales of research reports. The research fund was established in 1957 by earmarking the sum of $1,200,000 already held in the Association's Permanent Fund. The latter fund was accumulated over a period of years from member initiation fees, from income earned on investments, and from unspent annual income during the war and early post-war years when the

membership increased more rapidly than services to members could be expanded. Investment income received currently from the research fund makes it possible to maintain a stable and continuing program of research.

*Current Research Program*

During the past year, the Research Planning Committee asked the staff to prepare a summary of objectives and methods of research in management accounting. After review by the planning committee, this statement was published in the N.A.A. Bulletin.[4] Reprints were distributed to college teachers and to others interested in accounting research.

The same review led the Committee to decide that, in the future, more emphasis should be placed upon research of a basic character. For this purpose, basic research in accounting was defined as a process of "... identifying the purposes for which accounting may be used and defining the concepts of income, cost, and value which are relevant to each purpose." Basic research was distinguished from applied research which "... consists of finding or devising practical methods or procedures for developing the types of data needed for a given purpose."[5] This change of emphasis will be reflected in all future studies and, in addition, some studies which are primarily basic in nature are planned.

Since research is a continuing operation, a number of projects are in various stages of completion at any given time. The following five projects were in progress on August 1, 1960.

1. *Practical Application of Direct Costing.* While findings in a study of this same subject were published in 1953, the earlier study was largely exploratory in nature because very few companies were using direct costing at that time. Since then many companies have adopted direct costing and the current study will present the experience that fifty companies have had with direct costing.
2. *Costs of Manufacturing and Marketing Capacity.* With increased mechanization of industry and decreased flexibility in the work force, costs of maintaining capacity to do business have increased relative to the variable costs of producing and selling. The problems which arise in accounting for these costs constitute the subject of this study.
3. *Funds Flow Analysis for Managerial Control and Decision Making.* Preparation and use of short and long range cash forecasts and funds flow statements are being studied in this project.
4. *Uses and Classifications of Data for Managerial Decisions.* As a basic study, this project emphasizes the broad responsibility which the accountant has for supplying data to guide management. Concepts of income and cost relevant to various managerial purposes will be defined and techniques for developing the related data will be described.
5. *New Techniques in Inventory Management.* During recent years a variety of new techniques and tools have been applied to aid in management of inventories. Among these are statistical sampling, mathematical analysis, and application of computers for processing inventory data. This study will present and evaluate company experience with a selected group of such techniques and tools.

In addition to the projects listed above, the planning committee has in reserve a number of other topics for which staff time has not been available. The limiting factor in the amount of research that can be done has proved to be the supply of personnel qualified to carry on such research. This experience suggests the observation that future progress in the development of management accounting through research depends heavily upon the number and quality of the men trained for research by the universities. It also depends upon attracting these men to the challenging opportunities that I have described.

---

[4] March, 1960, pp. 31–37.
[5] Op. Cit., pp. 31–32.

# REPORT ON THE ACCOUNTING RESEARCH ACTIVITIES OF THE AMERICAN INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS*

WELDON POWELL
*Chairman of the Accounting Principles Board*

THE Institute's current approach to accounting research is something new. It originated in a suggestion made by Alvin R. Jennings in October 1957, following which a special committee was appointed to consider the matter. The special committee submitted a report in September 1958, proposing a plan for the organization and operation of the accounting research program and related activities of the Institute. Its report was adopted by the Council in April 1959, with one modification relating to housekeeping arrangements. The new plan became effective in September 1959, and we now are engaged in the task of making it operative.

We are confining ourselves, at least for the present, to the field of financial accounting, and are not entering into related fields, such as those of cost accounting, managerial accounting, and auditing. The aim of our research in this field is stated as follows in the report of the special committee: "The general purpose of the Institute in the field of financial accounting should be to advance the written expression of what constitutes generally accepted accounting principles, for the guidance of its members and of others. This means something more than a survey of existing practice. It means continuing effort to determine appropriate practice and to narrow the areas of difference and inconsistency in practice."

We visualize the broad problem of financial accounting as requiring attention at four levels: first, postulates; second, principles; third, rules or other guides for the application of principles in specific situations; and fourth, research.

Postulates we understand to be the basic assumptions on which principles rest. We are going to try to make clear our understanding and interpretation of what they are, to provide a meaningful foundation for the formulation of principles.

We also are going to try to formulate a fairly broad set of coordinated accounting principles on the basis of the postulates, probably similar in scope to the statements on accounting and reporting standards issued by the American Accounting Association.

We plan then to try to develop rules or other guides for the application of accounting principles in specific situations, in relation to the postulates and principles previously expressed. Statements of these probably will be comparable as to subject matter with the present accounting research bulletins. They are to have reasonable flexibility.

Adequate accounting research, we believe, is necessary in all the foregoing. We plan that our pronouncements on accounting matters will be based on thoroughgoing, independent study of the matters in question, during which consideration is given to all points of view.

The organization for carrying out our research work is made up of two bodies.

The first is the Accounting Principles Board. It consists of twenty-one members of the Institute, of whom thirteen are practitioners, three are teachers, three are business men, one is in government service, and one is the director of research of

* This paper was presented at the annual meeting of the Association at The Ohio State University on August 30, 1960.

the Institute, Carman G. Blough. The Board is the sole group in the Institute having authority to make or authorize public pronouncements on accounting principles.

The second is the Accounting Research Division of the Institute. We believe that adequate staff work is essential to the success of our program. We have been fortunate in securing as the head of our staff Maurice Moonitz, who, as Director of Accounting Research, is the administrative head of the Division and has active charge and direction of its work. We are equally fortunate to have Perry Mason as Associate Director of Accounting Research. Eventually the staff is to include, on a permanent basis, several senior members, several junior members, and necessary secretarial assistance. Ideally all the members of the staff should be both Ph.D.s and C.P.A.s. Thus far Dr. Mason has engaged two or three research assistants, and Dr. Moonitz and he are looking for qualified senior staff. The permanent staff is to be supplemented, as occasion arises and opportunity affords, by temporary personnel, usually for specific projects, obtained from educational institutions, public accounting firms, or other sources. Initially we are using, for part of their time, several university and college teachers of accounting.

Our research work is expected to proceed generally along the following lines.

When a decision is reached to undertake a research project, whatever staff members are deemed necessary will be assigned to it. We plan to make every effort to secure persons who are competent to participate in the particular project. At the same time a small project advisory committee composed of individuals especially qualified in the area under study will be appointed to consult from time to time with the staff. It is to be selected partly from the Board, with a member of the Board acting as its chairman, partly from the general membership of the Institute, and partly from industry and other sources outside the Institute. The staff and the project advisory committee will work together as a team in an effort to arrive at a sound solution to the given problem. There will be public announcement of each project, and interested persons will be invited to submit memoranda for consideration.

At the conclusion of the work on the project, the results will be published as one of a series of accounting research studies. The studies are to be in the form of a pamphlet or monograph presenting a detailed, documented report on the work, giving pro and con arguments on controversial points, offering conclusions or recommendations, and, where appropriate, illustrating and demonstrating the application of principles. They are to be published in the names of the Director of Accounting Research and those associated with him in the project, and are to have only such authority as these names give them. They are to be regarded simply as a presentation of what a group of able individuals considers to be a logical solution to a particular problem following a study of that problem, in relation to basic postulates and broad principles. The studies will furnish a vehicle for the exposure of matters for consideration and experimentation, and we hope that they will contribute substantially toward the development of sound accounting practices, especially as to unsettled and controversial matters.

Upon the publication of an accounting research study, the Board will consider it, and may take any one of three courses of action with respect to it.

If the Board thinks the conclusions in the accounting research study are sound and believes the time is opportune for the Institute to take a position on them, it will take steps to issue one of a series of pronouncements on accounting principles, concerning the subject of the study. We hope these pronouncements will be regarded as an authoritative written expres-

sion of what constitutes generally accepted accounting principles. As in the case of the accounting research studies, they are to be framed in relation to basic postulates and broad principles. Before they are published, however, drafts are to be widely exposed for comment to give interested persons opportunity to present additional memoranda for consideration by the Board.

On the other hand, if the Board disagrees with the conclusions in the accounting research study, it will disapprove the study. In this event it will make its dissent public, together with the reasons therefor.

Finally, if the Board believes the conclusions in the accounting research study should be given time to settle down, to allow for public reaction and experimentation, it will hold the matter for future attention. Meanwhile, members of the Institute will have an excellent opportunity, which I hope that they will use, to lead thinking in the direction of a sound solution to the problem involved, on the basis of the documented material contained in the published study.

The Board, of course, may make pronouncements on accounting principles which are not based on previously published accounting research studies. If it considers action on a particular matter urgent, it may instruct the Director of Accounting Research to have his staff prepare material for its consideration. However, the usual procedure doubtless will be that outlined above.

The Board also may, and probably will, issue interpretative rulings in answer to questions concerning its pronouncements, as occasion for them arises.

The planning of the work—and the Committee stressed the importance of this—is to be done by the Chairman of the Board and the Director of Accounting Research.

The Institute is arranging to bear the entire financial cost of this program. Our budget for next year is $200,000, and that for the following year probably will be higher. The Board has a fiscal committee, which has cognizance of budget matters.

However, we expect to take advantage of all available opportunities to secure the participation and cooperation of other organizations, groups, and individuals in the technical phases of the program to the greatest extent practicable. Such opportunities are several. One is in the invitation of non-members of the Institute—for example, teachers, business men, lawyers, and representatives of governmental bodies—to serve on project advisory committees for research projects. Another is in the solicitation of the views of others on research projects in process and on proposed pronouncements on accounting principles. Finally, the exchange of views through joint meetings and through discussion between individual members of the Institute and their acquaintances outside the profession always is helpful.

Research in accounting is more of the nature of applied research than of pure research: an important criterion of its success is the usefulness of its results. And by usefulness I mean not so much the possibility that something may be used, but rather the likelihood that it will be used. Accounting is nothing if not essentially utilitarian in nature. Accounting principles, if they are to be generally accepted, must be practically applicable. The accumulated experience of the responsible elements in the business community cannot be ignored.

This suggests that one of the first steps in an accounting research project should be to study prevailing practice—to find out what principles are actually being applied and what procedures are actually being followed in everyday life. There may be some who believe that this is all there is to accounting research; that generally accepted accounting principles are those that

actually are in use; that all that is necessary is to count noses. The Institute's approach, as I indicated above, goes further.

Actually, we believe that a firm foundation in accounting theory is necessary to the development of a sound superstructure of accounting practices and procedures. We seek what W. A. Paton and A. C. Littleton have referred to as "an integrated conception of the function of accounting as a means of expressing the financial facts of business in a significant manner." We hope to develop principles that are interrelated, integrated, internally consistent; and to consider new problems in relation to these princples and in relation to each other instead of as isolated matters to be dealt with empirically. To quote Professor Littleton again: "Whether we are conscious of them or not there are reasons beneath everything we do. Knowing what they are will provide a better understanding of our aims and thus help to discriminate among possible actions."

Please do not misunderstand me. I am not suggesting that we intend to abandon the practical approach to accounting in favor of the theoretical one. I hold firmly to what I already have said as to the essentially utilitarian nature of accounting. What I am suggesting is that we hope to achieve a proper balance between theory and practice. Theory needs to be tested in the light of experience and common sense, just as practice needs to be considered in the light of logic and reason. The statement sometimes made that a given procedure is theoretically sound but practically unfeasible is a contradiction. If the indicated result is impracticable, the theory upon which it is based is invalid and should be restudied. Thus practice tends to refine and improve theory, just as theory helps to solve practical problems.

We hope, of course, that the Board's pronouncements on accounting principles will receive acceptance, but here we plan to place reliance on persuasion rather than on compulsion. The special committee concluded its report by indicating that in its view the best method of enforcing pronouncements on accounting principles would be to secure their acceptance as high authority by professional accountants in advising clients and in preparing reports on financial statements. I heartily support the special committee's position, for I do not believe accounting principles can be imposed by fiat, unless, of course, this is undertaken by government, which all of us trust will not come to pass. At the same time I do not think the profession has done enough to promote sound accounting through persuasive effort. I hope the implements the new program will make available will help us to improve our performance in this regard.

The accounting research studies should be especially useful. I hope a reasonable number of them will deal with matters that are unsettled and controversial and appear likely to remain so for a time. Thoroughgoing, documented, logical presentations of these matters should help considerably in stimulating thinking along sound lines and in promoting experimentation with workable alternatives.

So much for the general aspects of our program. As for specific research projects, to date we have begun six of them and have plans for a seventh.

The first two are those recommended by the special committee, namely, studies of postulates and principles. Maurice Moonitz, formerly professor of accounting at the University of California at Berkeley, had agreed to direct the staff work on both these projects before he was appointed Director of Accounting Research of the Institute, and he still plans to do so, with the assistance of Robert T. Sprouse of California. His project advisory committees comprise four accountants in public practice, one recently retired practitioner, two teachers, a lawyer, an economist, an

insurance company executive, the Chief Accountant of the Securities and Exchange Commission, and the Director of Research of the Institute. In this area attention probably will be given to matters such as the use of alternatives, both generally and in relation to regulatory requirements, and to the concepts of materiality, consistency, uniformity, comparability, and the like.

The third is a study of the accounting for income taxes. Homer A. Black of Florida State University is the director of this project, and his project advisory committee consists of two accountants in public practice, two teachers, and two business executives. I need not dwell on the many difficult problems that have arisen in this area during recent years as a result of widening divergencies between sound accounting practices and requirements of income-tax laws as to the determination of income. The most bothersome situations, of course, are those in which there are important differences in accounting method as between the financial statements and the tax returns; these involve questions as to the desirability or necessity of allocating income taxes among periods of time.

The fourth research project concerns the accounting for long-term leases. This study is in charge of John H. Myers of Northwestern University. He is working with a project advisory committee consisting of three public accountants, a teacher, and an investment analyst. The major question in this area is how to deal with cases in which long-term leases are used as a means of capital financing. This question is easy to state but most difficult to answer. Professor Myers plans to consider it as it affects both the lessee and the lessor.

The fifth has as its subject the accounting treatment of business combinations. Arthur R. Wyatt of the University of Illinois is directing it. Three accountants in public practice, a lawer, a steel company president, and a vice-president of the New York Stock Exchange constitute the project advisory committee that is working with him on it. This study necessitates among other things a reconsideration of the whole pooling-of-interests concept, and of the criteria by which to judge whether a given transaction should be accounted for as a pooling of interests or as a purchase of one unit by another. There are some urgent practical problems in this area.

The sixth and final research project now under way relates to the accounting of non-profit organizations. Emerson O. Henke of Baylor University is conducting the work on this. His project advisory committee includes, in addition to five accountants in public practice, several of whom have served on Institute committees on non-profit organizations, the principal financial officers of three such organizations—a university, a hospital, and a foundation. The Board directed that this project be undertaken because it felt that more intensive research was needed than the committee on non-profit organizations had been able to carry out. Numerous problems affecting educational institutions, hospitals, foundations, municipalities, and the like are to be considered—fund accounting, depreciation practices, classification of expenditures, applicability or non-applicability of accounting principles followed by industrial and commercial enterprises, and so on.

The seventh project will be a study of the accounting for pension costs. The Board believes there is a need for this, and Dr. Moonitz expects to move on it as soon as practicable.

These research projects were selected for initial consideration because we thought they were urgent. You will note that several of them call for a reconsideration of certain of the accounting research bulletins previously issued by the former committee on accounting procedure. Eventually, we probably shall make new studies of most if not all of the accounting research bulletins.

Meanwhile, the accounting research bulletins will continue in effect.

I hope we also can do some effective work in the area of communication. We accountants are prone to express ourselves sometimes in ways which seem to hinder rather than to help non-accountants to understand us. We use too many technical terms. We use ordinary words in a technical sense. We are imprecise in our choice of language. We are verbose. We appear to regard form more highly than substance. I hope those reponsible for the new accounting research program will give early and careful attention to terminology.

At the same time I recognize that improved terminology, important as it is, is not the answer to all our difficulties in the area of communication. It is impossible to cast financial statements in form such that they cannot be misunderstood by the least intelligent person who may have occasion to use them. There is a point beyond which it is necessary to put the emphasis on educating the users of financial data instead of on further simplifying the data. I suggest this aspect of the matter also merits attention. In this connection the following is of interest; it is taken from a statement on standards of disclosure for published financial reports, issued in 1954 by the Committee on Accounting Concepts and Standards of the American Accounting Association: "The underlying determinant of adequacy of disclosure in published financial reports is their usefulness in making decisions, particularly with respect to investment problems. It is reasonable to assume that any recipient desirous of making effective use of a financial statement must be willing and competent to read it carefully and with discrimination. Such statements should, therefore, be prepared for use by interested persons having a working knowledge of business methods and terminology."

How soon the results of any or all of these research projects will be known is something that cannot be foretold at this time. It is to be hoped that the work on postulates and principles will proceed fast enough so the results will be available in time to serve as a foundation for the conclusions as to income taxes, leases, business combinations, non-profit organizations, and pensions. If the study of postulates and priniciples is delayed, we shall have to decide whether to release anything on the specific matters in advance of the reports on postulates and principles. We probably shall make our decision in the light of all the circumstances at the time it becomes necessary for us to act.

Meanwhile, we shall try to do a thorough job on the various projects we have under way. We shall endeavor to consider all the angles. We shall explore existing practice. We shall read everything we can find on the various subjects. We shall ask for the comments of all interested persons. We shall interview many different people.

Finally, we shall try to do some bold thinking about our problems. If we are to succeed, we shall have to be willing to consider new ideas in developing theory, and to reach out towards new methods not tried before in developing relevant practices and procedures. There are those who think we need a major overhaul, not a minor repair job. George O. May, in writing to me recently, said: "It is no time for patching up; it is time for viewing the system as a whole and developing, if not a philosophy of accounting, at least a mode of thought that visualizes the problem as a whole."

We shall need also a will to keep up with current problems and to take a lead in the thinking on them. This means continuous research. Progress and change in human activities create new problems for accountants. During recent years the pace has been rapid, and I doubt that we have kept up with it.

We earnestly solicit your help.

# RESEARCH PROGRAM OF CONTROLLERS INSTITUTE RESEARCH FOUNDATION*

W. JOSEPH LITTLEFIELD

*Research Director, Controllers Institute Research Foundation*

The Controllers Institute Research Foundation is the research arm of the Controllers Institute of America. It is natural therefore that its research program should be based on the objectives of the parent organization. Among the objectives of the Controllers Institute are the following:

1. To develop a progressive concept of controllership adequate to meet the requirements of modern business.
2. To educate business management and the public in understanding this concept.
3. To assist the controller to give full expression to this concept in his own organization.

It is obvious that a research program based on these objectives must be flexible and subject to revision from time to time with changing conditions. The basic objective of the Research Foundation is to conduct research and publish authoritative material in the field of business management with particular emphasis on the principles and practices of controllership and its evolving role in management of business. Almost from the day of its inception, 1931, the members of the Controllers Institute were very interested in furthering research in their particular field. This effort resulted in the formation of a separate corporation in 1944 for this purpose.

Co-ordination of the research program with the policy of the Controllers Institute is obtained by having the trustees of the Research Foundation appointed by the President of the Institute, by having the Chairman of the Board and President of the Institute serve ex-officio as trustees of the Foundation and by having the Managing Director of the Institute also the Managing Director of the Research Foundation.

The research policy of the Research Foundation has been reviewed by the Trustees of the Foundation and the Directors of Controllers Institute from time to time. Special reports were made in 1952 and again in 1957 making recommendations for revising the policy, program and method of operation. The present policy is for a discontinuance of case studies as such. Further the policy states and I quote: "Research must transcend the service type project in which business practices are surveyed and penetrate new territory. As a corollary, we believe that we might well take a position in our research reports concerning the preferred practices in certain controllership areas. We also feel that management problems and the contribution of controllership to their solution merit priority over problems in the mechanics of gathering and processing information."

Thus the broad objective of the Institute and of the Foundation is to make a real contribution to management science. We can strengthen management by providing it with new and useful tools in the fields in which controllership has application. Research is directed therefore toward this broad objective.

The results of our research should be authoritative material on all phases of controllership—philosophy, principles, practice and specific application in the developing industrial scene.

The new policy forced a reorganization of the research effort. To conduct the type of research we now want requires people

* This paper was presented at the annual meeting of the Association at The Ohio State University on August 30, 1960.

well qualified to study the particular field of interest. We certainly can not afford to have such experts permanently on our payroll. Hence our plan is to engage outside people to conduct projects and operate with a small permanent staff. In our research staff we have a research director, a research associate and two in the office staff. This research staff will do about two studies a year, besides handling inquiries and doing other small technical jobs. We expect to do about two major studies each year through outside researchers.

The first project under this new policy was published last fall under the title "Business Experience with Electronic Computers." The study was conducted by Messrs. Conway, Gibbons and Watts, of Price Waterhouse & Co., This study evaluated and summarized what has been learned through the entire brief history of commercial electronic data processing by examining the approaches and techniques, in making electronic data processing installations, of seventeen companies engaged in diverse fields of business. The results of their experiences are reported, so far as making the decision, company education and the programming group, development of the applications and conversion, operation of equipment and relations with the manufacturer. The report covers steps to be taken when considering data processing installations and sets forth recommended procedures and controls for management and employee education, conversion of applications, and operation of the data processing department. It also takes a brief look into the future of this new field.

Last spring, we published the third volume of a series of three on Corporate Records Retention. The first volume covered the U. S. Federal Requirements and volume two covered the Canadian Federal and Provincial Requirements. This third volume covers the requirements of all fifty of the United States.

At the present time, we have five studies in progress. One of these is on the Measurement of the Effectiveness of Marketing Costs. The broad objectives of this study are to evaluate practices of selected companies in the analysis and handling of marketing costs. Some thirty companies are being visited to secure data. The report will highlight the manner in which the controller can aid marketing management in such areas as pricing, salesmen's compensation, marketing methods, and distribution or merchandising plans. This study is being conducted by Dr. Michael Schiff, Professor of Marketing at New York University, with the assistance of a Mr. Martin Mellman, candidate for a Ph.D. degree in business administration at New York University.

The second study deals with the subject of Acquisitions and Mergers. The purpose of this project is to compile a comprehensive guide for managers of companies who are considering the acquisition of or merger with other companies. The project will cover such areas as the growth policy of a company, a discussion of the forms of acquisition, and valuation techniques. It will also consider the tax alternatives and advantages, and there will be a section on the legality of mergers and acquisitions which will cover the laws of all the states and the federal laws which pertain to this subject. Finally there will be sample check-lists used by companies in specific industries.

A third project under way is a revision of a 1951 publication on the subject of Business Consultants: Their Uses and Limitations. I believe the title adequately describes the project.

The fourth study which is just getting under way is in the area of return on investment. We have in mind two studies in this field. One is the return on investment concept as used by a company in its day-to-day decisions; it would cover such areas

as economical production runs, economical purchase quantity, inventory control, advertising expense, measuring results of operations, and other operating decisions.

The other study will be a review of the various methods used to determine the return on investment of a proposed capital expenditure and a discussion of these methods stating their advantages and disadvantages. We may indicate which methods seem more logically to fit into the concept of return on investment as a company policy, especially when used in the measurement of performance.

These last three studies are being conducted by our staff.

The fifth study which is also just getting under way is on Office Productivity, and is under the direction of Professor Robert P. Brecht of the Wharton School of Finance and Commerce, University of Pennsylvania. The purpose of this study is to determine how companies with extensive office operations have gone about lowering the cost of these operations. The researchers will study and analyze various techniques, methods, and devices used successfully by these companies to increase productivity of office people, and to lower the cost of paper work. It will cover the administration of people but will not get into the various forms of electronic data processing.

Of these five projects, we expect to be able to publish about three next year; our fiscal year begins on September 1st.

We are exploring a number of other projects, in some cases to determine whether or not they are useful and in other cases to find out how we can do them. In the latter category is the one which we want to do on the Measurement of the Effectiveness of Research and Development Expense. We expect during the coming year, to lay the foundation for this study and to use two more years for the study. Members of the New York control of the Institute have shown great interest in this study. They formed a special committee to deal with the subject. Their work will be of great help in delineating the problem. We also hope to secure the cooperation of the Industrial Research Institute in this research project.

Of the other subjects we are exploring, the most important lie in the field of Management Planning and Control. A standing committee of the Institute is working on the foundations of this study, and we hope to plan a number of research studies as a result of its work.

Tentatively among the subjects to be explored are the planning and control functions themselves, to determine just how controllership contributes to successful accomplishment.

Then we will study the field of communication, the flow of information within an enterprise and between the enterprise and the stockholder, the public and the government.

Another project is in the area of Management Control Accounting. Today we find tax considerations affecting corporate accounting, and we also find the use of subsidiary corporations purely for tax saving purposes. Operating divisions of an enterprise have responsibilities which are in no way related to the corporate structure. Hence, reports of performance of these divisions must be compiled separately from the usual corporate reports.

A revised program for the next four or five years is now being formulated for study by the trustees of the Research Foundation. I have given you some of our thoughts on this program.

Before I close, just one word about our financing. The Controllers Institute pays about 30% to 40% of our total expense, and as time passes the percentage will diminish. The balance is raised by voluntary subscriptions or donations from members and the companies with which they

are associated. Our total annual budget averages about $100,000, but the actual amount spent in any one year will depend on the particular research projects under way and the cost of publication. When a research project is completed, the results of the study, that is, the final report in book form, is distributed to all members of the Controllers Institute. Hence, each of our studies has an initial distribution of about 5,000 copies. The Institute prints additional copies for sale.

One of the most important aspects of our research effort is the participation of members of the Controllers Institute in the entire program. Not only do they and their companies support it financially, but they participate in various ways. The trustees are a dedicated group giving time and thought to our plans and the studies themselves. Panels of experts from among the members make themselves available to those conducting the research. Review panels drawn from the members review the finished product and pass it on for publication. But most important, members continuously bring us problems or situations from which research projects are derived. This great interest is the motivating force behind the Controllers Institute Research Foundation.

# SOME FACTS OF FEDERAL FISCAL LIFE AND THEIR IMPORTANCE TO THINKING AMERICANS*

John A. Beckett
*Assistant Director, Bureau of the Budget*

It is certainly a pleasure to come out here to Columbus to participate in the annual meeting of the American Accounting Association. Returning to the academic environment from the Washington scene is a refreshing experience, as well as a welcome opportunity for me to speak to an audience whose interests and experiences in many ways parallel my own. Needless to say, it is also a great pleasure to be back amongst a number of old friends in the teaching profession.

Yours is a group whose members spend most of their professional lives—and perhaps some of their private lives as well—thinking about matters having to do with finance. You deal in numbers, and the control of activities through the use of financial data.

It is natural, then, that I should choose to speak to you today about financial matters and the control and direction of activities with some recognition of and deference to the numbers involved. This will be familiar territory to all of you.

That the numbers are substantially larger than those with which you are accustomed to deal makes them even more important to all of us as citizens of our country. But no matter how large the figures are, you will recognize showing through them some of the basic principles with which you are accustomed to deal in your daily professional and personal lives.

I propose to speak today about some facts of Federal fiscal life which I believe are important to every one of us, not only as professional people, but as citizens as well and to call your attention to some schemes for contravening them.

At the outset, however, I would like to put the Federal Government in perspective.

There is not just one government in the United States; there are many. We sometimes forget this when we speak of "government." In a democracy one of the characteristics of government is the maintenance of public services which are responsive to local needs and choices. The further we remove the issues of government from the local scene, the greater is the tendency of government to lose its sensitivity to local needs. That is why we have state, county, township, and city governments in the United States. They employ nearly three times as many people as are employed by the Federal Government, and together have been spending between forty and fifty per cent as much in recent years as the Federal Government. As a matter of fact, if you exclude military and international expenditures, state and local governments spend more than the Federal Government does. Moreover, state and local governments are growing in size, in complexity, and in consequence. The growth of great metropolitan centers in the United States has been one of the major characteristics of the post-war years, and it is continuing apace, with accompanying issues of social, financial, and other natures.

---

* This paper was presented at the annual meeting of the Association at The Ohio State University on August 31, 1960.

So when we think of "government," let us not forget that important as the Federal Government has become on the national scene in recent years, and important as it may further become in the years ahead, it is not by any means our only instrument of national development and service to the ever-growing number of citizens in our country. The President time and again has sought to maintain perspective in the public mind with respect to the balance between and amongst these governments.

But back again to some facts of life in the Federal Government, and the issues that lie behind them.

*The Leverage of Recession*

You will remember that in late 1957 and early 1958 this country suffered a business recession. That recession was short-lived, but it did affect many people and many businesses.

You may be interested to know how that short-lived business recession affected Federal finances. The Federal Government's income from individual and corporate taxes fell off substantially, and at the same time some government expenditures were increased, in part to produce a countereffect to reduce business activity. The net result for the Federal Government was a deficit of 12.4 billion dollars in fiscal year 1959—the largest deficit in the peacetime history of the United States.

The recession which caused that result was, I am sure we will all agree, regrettable. It would be much nicer if it had not occurred. But let none of us infer that this was a sign of economic weakness. We have a strong and resilient economy; it has produced the highest standard of living, by far, of any economy in the world. In spite of all the fear talk of some who interpret an occasional recession as a symptom of grave weakness in our economic machinery, we have an active productive capacity, and an output second to none in the world. That we have—and will continue to have—good and poor years, is no reflection on the basic strength of our economy.

But the point is that the 1957–1958 recession produced a 12.4 billion dollar deficit for the Federal Government in fiscal 1959; as you can imagine, that was a large addition to the already substantial debt of the United States.

The first fact which I want to give you, then, is that even a short economic recession can produce sobering fiscal consequences for the Federal Government.

*The Size of Surpluses*

I am pleased to remind you that the fiscal year 1960 showed a surplus substantially above that which had been expected earlier in the year. When the year ended last June 30, we were 1.1 billion dollars in the black. But as gratifying as that was, you can see that it was small indeed when compared with the 1959 deficit of 12.4 billion dollars.

For the current fiscal year—1961—the administration has given to the Congress a proposed budget which would produce a surplus by July of 1961 of 4.2 billion dollars—the second highest on record. But I am sorry to report that the likelihood of achieving any such surplus has been sharply reduced by recent actions of the Congress and its failure to enact some of the President's proposals.

Never in the history of our country have we had a surplus in one year which approached the size of the deficit induced by that single short-lived recession in 1958.

This is the second fact of Federal fiscal life which I want to bring to your attention today. The best of our surpluses in recent years do not begin to compensate for the revenue losses in times when economic activity recedes temporarily.

*Debt and Its Carrying Costs*

Annual deficits and surpluses are one thing; the total debt of the Nation—and more particularly the cost of carrying it—

is another. At present the United States Government owes about 288 billion dollars to the holders of government securities, and the annual interest expense for carrying that debt was estimated last January at around eleven per cent of the total budget receipts of the Federal Government anticipated in fiscal 1951, or 9.5 billion dollars.

Put it another way; out of every tax dollar you pay to the government—and personal income tax payments constitute fifty-two per cent of all income budgeted for 1961—eleven cents go to meet annual interest costs on those government securities. When you remember that seventy-seven per cent of the total individual income taxes received by the Federal Government arise from the income brackets under $5,000, you get an even clearer idea of the impact of interest costs on the individual taxpayer.

We pay far more for interest than we do for agricultural price supports or veterans' benefits. In fact, the only government program which costs more than interest on the public debt is major national security, for which we spent—last year—45.6 billion dollars.

I think you will agree that this is a high cost to pay for interest.

This is the third fact of Federal fiscal life which I want to leave with you today: The carrying cost of our Federal Government debt is around eleven per cent of our total income.

These three—deficits, surpluses, and debt—describe some of the more apparent realities of Federal fiscal life.

But there are some other facts of fiscal life that are not so apparent. Let's have a look at a few.

*"Built-in" Increases of Government Spending*

First, there are many programs which are today accepted as normal, necessary, inescapable programs of the Federal Government and which are due to cost much more in the years ahead then they do now. With growing population, increasing urbanization, and accompanying increases in the complexity of social life, some present programs will inevitably increase in cost. Such "built-in" increases in 1961 alone came to over 2 billion dollars; for 1962, there are already "built-in" increases of over a billion dollars more.

The Government is committed in the future for plenty of other costs. For example:

—Merchant Marine subsidies and ship replacement just for currently subsidized ships will cost 4.3 billion dollars.
—5.4 billion dollars is already committed forfuture Federal contributions for public housing.
—Federal civil public works projects already started will cost 7 billion dollars after 1961 to complete.
—It may cost as much as 30 billion dollars or more to complete the interstate highway program.

These and other obligations, along with huge unexpended balances in our defense program amount to 100 billion dollars of future commitments.

There are others, too, for which we must pay in the future for obligations already incurred.

—Accrued military retirement amounts to 38 billion dollars, and is not funded.
—Accrued civil service retirement amounts to about 28 billion dollars above present fund balances.
—Veterans' pensions, compensation, and other benefits amount to another 300 billion dollars.

All these are obligations we have assumed for past services.

Now if you take the 288 billion dollars of national debt, add the 100 billion of commitments we have made for going programs, and about 370 billion for retire-

ment, pension and benefit programs, you come to the astronomical total of over 750 billion dollars—the size of our national mortgage on the future.

This is not fancy, this is fact; a fact of Federal fiscal life—albeit not a very widely recognized fact—with which it would serve more Americans to be familiar.

### *Demand for New Programs*

Secondly, added to the already built-in growth of Federal expenditures and to the national mortgage which I have mentioned, there is an almost insatiable demand for Federal Government activities. There are insistent demands for new or expanded programs in education, housing, reclamation, defense, medical care, research, space exploration; you name it, there are pressures for new programs—without, of course, new taxes.

There is really no way of measuring with any accuracy the total additional cost of satisfying all these demands, but I can assure you they run up to incredible figures. If you have been sobered by my talk of billions up to this point you would be staggered by the magnitude of the costs which would be wished onto the Federal Government by those who look to it to supply all of what they conceive to be our national needs, and much more than the Federal Government is committed to at the present time.

### *Summary—Facts of Fiscal Life*

In summary these are a few of the hard facts of fiscal life in the Federal Government.

—Deficits are easy to come by;

—Surpluses are hard to come by and they do not compensate for the deficits;

—Debt costs are higher then any other Federal costs save those for defense;

—We are already committed to spend incredible sums in the future for past services;

—Higher levels of spending in the future are built into present programs;

—There are tremendous pressures to get the Federal Government to do still more; and

—Of course, there is a widespread reluctance to face up to the problem of how to pay for all of it.

These fiscal facts of life are now well recognized by most people who make it a point to study government affairs, and they are beginning to be recognized more and more broadly in the American electorate. Together they pose difficult issues and tough challenges.

Obviously, so long as we are spending more than half our Government's income on defense, and another eleven per cent on just carrying our debt, and so long as we are unable to generate big enough surpluses to compensate for our Federal deficits, there are going to be difficulties in paying for the many things we have already "ordered" and financing the many other things that people would like the Federal Government to provide—without going further in debt or raising present tax rates.

In the face of all this, we now hear the rising cry that the "public sector" of our economy is being starved, that as a Nation we are spending more on luxuries and less on essentials than we should, and that because of this, the Federal Government should accelerate its spending.

This syllogism exposes a remarkable lack of confidence in the free enterprise system and a substantial ignorance of the enormous growth of public services in the past decade, to say nothing of an obvious blindness to the existence and the role of state and local governments. It is a clear indication of the philosophy that Federal Government should assume the burdens of the people, and is in sharp contrast to Abra-

ham Lincoln's timeless expression when he said the legitimate object of government is "to do for the people whatever they need to have done, but cannot do at all, or cannot so well do, for themselves—in their separate and individual capacities."

Nevertheless, the pressure for unnecessary Federal Government spending persists.

*Economic Growth*

It is at this point that the matter of the country's rate of economic growth comes to the fore. For as the economy grows, tax revenues—at the same or even lower tax rates—increase. And that increase in Federal revenues could be used, if not for debt reduction then perhaps to absorb some of the additional costs of added public service. In simple kitchen arithmetic, the Federal Government could have more to spend on the needs of the Nation without adding further to its debt if its income were to increase as a simple function of the increase in economic acitivity of the Nation—provided, of course, that the added income were more than enough to pay for the commitments that already exist as they fall due in the future.

That's why we hear so much these days about economic growth. And that's why there have been so many proposals recently for forcing the Nation's rate of economic growth to levels which are significantly above the historical rate of about 3 per cent.

Now there is every reason for all of us to have confidence in the continuing growth of our Nation at historical or even higher rates. I submit to you, however, that we can no longer afford to continue the popular illusion that the Federal Government is the cornucopia of modern times or that there are readily available magic formulas by the use of which we can have all the benefits and pay none of the costs of an artificially stimulated economic growth rate.

All about us these days we hear proposals built on the assumption that money buys everything—more money will buy adequate defense, an ideal educational system, a solution to the problems of old age, of illness, and of juvenile delinquency. Now we have the proposition that we can spend ourselves into economic growth.

Schemes to insure "forced growth" of the country's economy should be recognized for just what they are—alternatives to sound economic growth.

When I think of the proposals for artificial stimulation of the rate of growth of our economy I am somehow reminded of the mass production of chickens on our automated farms. From the egg to the chopping block, today's production-line chickens live in a controlled environment. They are confined in tiny cages and kept under almost constant light so that they will have time to eat more; they are fed concentrated appetite-stimulating, high-energy food; and they are sold after nine weeks as three-pound broilers.

Here you have an accelerated rate of growth all right. And with more research perhaps it can be even further accelerated —to eight weeks or to seven. Maybe since they hardly have any need for legs any more, the growth of these fowl may even be redirected; ways might be found to discourage their growth of legs and make them look more like the "schmoos" of comic strip fame.

As beneficiaries of this "forced growth" in chickens, the American family certainly has nothing to complain about. But it strikes me as significant that such an end product can be produced only at a cost of complete regimentation and the tightest of environmental control.

The cost of "forced feeding" to maintain an accelerated rate of growth of our

economy is similar in many ways, though it is by no means as apparent.

To achieve acceleration in economic growth of the Nation, it is proposed, among other things, that the Federal Government spend more—generally by more borrowing, of course, rather than by increasing taxes.

I leave it to you, on the basis of the fiscal facts of life which I have mentioned up to this point, to consider what such added spending would do to the national debt, the annual cost of carrying it, and the fiscal integrity of our Federal Government. Instead let me deal with less obvious, but no less important side-effects which could very easily be induced by such "forced feeding" of our economy.

If such additional spending occurs at times when the economy is operating at substantially less than its capacity, the effect of that spending is to reduce unemployment. But if such additional spending occurs at times of close-to-capacity operation in order to accelerate the economic rate of activity, then there is little unemployment to reduce and the most likely effect is higher prices and inflationary pressures. It is at these latter times that the economic growth faddists expect increased Government spending to contribute substantially to an even higher growth rate for the economy!

Actually this is an open invitation to inflation, and must be recognized as such by the American electorate. If we follow the course of "forced feeding" of our economy when times are good we will surely buy the by-products that come with it. As surely as inflation follows "forced feeding," price controls follow inflation. And price controls are the forerunners of other Government restrictions on the freedom of individual choice.

The prospective cost, as in the case of the chickens, is loss of freedom for the individual. And this, I suggest, is too precious a freedom to gamble on losing.

Let us remember that the people of this country have never been exposed to the evil of galloping inflation, and we have known governmental control only to a limited extent in time of war. Yet the peoples of many other countries know these twin thieves of freedom intimately, and they are quick to warn us that these are perils to be soberly considered as we chart the course of our Nation in the years ahead.

No one should assume that this could not happen here.

Let me put this point another way: If from this meeting you chose to drive home as fast as your car would take you, your chances of getting there intact would be reduced very substantially over your chances of getting there at reasonable speed, taking into account the hazards of the road. At forced draft you might make it all right; and in getting there earlier you might enjoy an advantage over your neighbor. But in doing so you take unto yourself the potential of disaster along the way.

In the case of the individual, his failure to make it home would be a tragedy; in the case of the economy of the United States it would be sheer catastrophe. Taking such risks with the economy of the United States is nothing short of playing Russian roulette with the future of our country.

The sooner we recognize the potential side-effects of forced economic growth—inflation and regimentation—the sooner will the American electorate insist on a sound course of economic growth for our country. To do otherwise is to gamble the whole future of the Nation for some questionable benefits in the short run. Conservative growth may have some disadvantages, but this, I submit, is the ***cost of freedom.***

*Conclusion*

There has been much loose talk about the Federal budget which exposes these facts of life—that it has thwarted the achievement of national goals and inhibited the growth of our Nation. The all-too-common vision of the fiscal conservative is commonly contrasted with that of the so-called liberal who is conceived to be the embodiment of bold, forward thinking.

Do not be misled. The financial strength of our Nation is indispensable to our confidence in ourselves, and to our position as a leader amongst nations of the world. We could do the Russians—who have vowed to bury us economically—no greater favor than to sap the initiative of individuals and dissipate our national strength through faulty economic practices leading to inflation and Government controls. It is the conservatives who are attempting to preserve the fiscal integrity of the Federal Government, and if that point of view lacks glamour, it at least has the comfort of being on the side of the right. Consider this carefully as you appraise the proposals of the so-called liberals: there is no tolerable alternative to conservatism in Federal finance.

In the words of Justice Cardozo, "nothing can relieve a free society of the pain of choosing at every step." As you exercise your influence upon the selection of alternative courses of action in the Federal Government, may you bear in mind the fiscal facts of Federal life of which I have spoken today, and make your painful choices wisely and well.

# THEORY AND RESEARCH IN MANAGEMENT ACCOUNTING*

Paul Kircher

*Associate Professor, University of California, Los Angeles*

Commercial and governmental operations are constantly increasing in size, in complexity, and in the number of people affected. It has become essential that simplifying techniques be developed so that human intelligence can plan and control them. New systems of communication and data processing, including the use of electronic computers, have shown promise for meeting part of the problem. New scientific analysis methods, mostly mathematical, meet some of the conceptual needs. Both of these, however, should rely on the accounting system for the greater part of their data.

Accounting is basically a method of measurement and communication. The importance of both techniques has increased considerably in recent years. Measurement has reached a stature in science such that some believe that unless a process can be measured the study of it can hardly be called scientific. This position is probably exaggerated, but certainly a field has a better chance of enjoying the benefits of the scientific approach if its measurements are accurate.

Communication also has been studied by a wide range of researchers, from the psychologists interested in motivation to the mathematicians with their information theory. However, these efforts have not yet had much fundamental impact on accounting theory.

Accounting activities have increased for the most part because the need for records of transactions has become so great, not because of new techniques or research ideas. Russia today, for example, in spite of relatively limited interest in accounting theory, has more bookkeepers than the United States. They are required in the complex Russian economy. Russian accounting is still largely done by hand.[1] The Russians have at last begun to recognize the handicaps of their system and have planned an extensive revision by 1965, including much more use of mechanization. Their journals frequently discuss the weaknesses of their general concepts and of their data handling systems.

American accountants have shown considerable awareness of growing problems in their field. Our magazines regularly feature articles that deal with scientific developments in mathematics, statistics, symbolic logic, computers, and their impact on management planning and control.

Another indication is the encouragement of research by our universities, as shown in the lists of *Research Projects in Accounting*, reported annually in the October issues of The Accounting Review. Category V, which covers *Accounting Systems, Budgeting, Cost Accounting, Controllership* and *Managerial Accounting, Internal Auditing,* and *Machine Methods*, has had in recent years more Doctors' and Masters' Theses than Category I, *Theory of Accounting*, with its eleven subcategories. This was not the case when the lists were first published, almost ten years ago.[2]

In spite of all this activity, as Moonitz and Nelson have pointed out in their

* This is the fourth and last in a series of papers based upon the work of the Committee on Accounting Theory during the two years ended December 31, 1959. These papers represent the views of their respective authors and are in no sense committee reports.

[1] See "Accounting Mechanization in the USSR," News Note, *The Journal of Accountancy*, August, 1960, p. 30.

[2] The Accounting Review, April 1951. The categories were not established until later, but the observation is accurate.

paper, "Recent Developments in Accounting Theory,"[3] it is possible to take the position that there is as yet no "literature" in the field of the theory of management accounting. Articles are devoted mostly to practices that have been found effective, or those that the author believes would be effective, rather than to fundamental theory.

This situation offers an opportunity for scholars, particularly younger men who are looking for a chance to make a real contribution. The purpose of this essay is to try to point a direction and to set a background for this type of effort.

*Accountants and Decisions*

Managers realize that their decisions are more likely to lead to desired results if regularly recorded accounting data are compared with forecasts and standards, and are developed into formal projections of the future. As a consequence, budget making has become the rule, rather than the exception. Cost accounting, already used to provide data to value inventories and to measure income, has been expanded by the introduction of standard cost and direct (variable) cost concepts. These are needed to evaluate performance and plan future changes.

Thus the stage has been set for a further effort—the formal measurement and logical simulation of the decision process itself. This step will not be easy. Many accountants still believe honestly, even fervently, that objective-minded CPA's should not involve themselves with that intangible unknown, the future. They believe we should be most cautious in attempting to analyse management's prerogative—decision making.

Certain economic and management problems, however, have become so complex that a manager cannot make intelligent predictions without expert assistance. Even then he cannot always be sure to find the best answer. He does not have time to work out all possible acceptable solutions, even though he may know how to do so. As a result, managers have rapidly expanded their use of staff experts. Today it is not unusual for managers to call on mathematicians and "management accountants" to help work out or lay the groundwork for decisions.

These workers have found a common ground and, as usually happens, they began to meet to share their discoveries. After a while they undertook formal organizations, such as the Institute of Management Sciences, the Operations Research Society, the Institute for Industrial and Applied Mathematics, and committees on Management Accounting in other organizations.

Workers in these groups might have had only a limited impact on business affairs. Their assistance usually was expensive and at first it seemed applicable only to a few areas. However, at the same time other developments occurred which extended the usefulness of their efforts.

These developments were in part a result of the all-out drive to develop atomic and space weapons. Such research called for a large amount of computation so large sums were spent to hasten the development of the electronic computer and other data processing equipment. This has given to management new systems that can be programmed to make logical choices between magnitudes. Any situation which can be measured and whose desired outcome is quantitative may be automatically controlled by:

(1) Setting numerical limits derived from an integrated study of goals.
(2) Recording observed data about operations or transactions.
(3) Feeding back control data.

[3] Maurice Moonitz and Carl L. Nelson, "Recent Developments in Accounting Theory", THE ACCOUNTING REVIEW, April 1960, p. 208.

Many instances not normally thought of as quantitative, such as color choice or intelligence level, now can be handled by numerical coding.

With these aids available some managers began to take a real interest in management accounting and new techniques. They hired men, bought or leased computers, and set the two to work on large-scale problems. As a rule the problems had to be large if they were to offer possible savings big enough to justify the cost. The problems also had to be complicated, otherwise they could be solved by simpler approaches.

Since the problems studied were already large and complicated, workers and managers became aware that they often were only a few steps away from consideration of the business as a whole, or at least large sections of it. They could also benefit by study of the entire economic environment. Analysts found in many cases the more factors that could be considered, the better the solution. Thus a type of analysis developed which became known as "the integrated systems approach."

The large and complicated nature of the problems, plus the integrated systems approach of the mathematically-trained analysts, made it inevitable that before they attempted a solution they would build a symbolic model of the situation. Flow charts were used as a symbolic means for presenting large systems. Mathematical models were developed as a way to handle a great deal of information, particularly data relationships, in a way that permitted manipulation of the model before an attempt was made to control the actual situation. Other logical methods were also devised.

From these efforts it began to be apparent that a key man was the person who supplied the data and understood its significance. An apparatus for data recording, transfer, processing, and reporting already existed. It was natural to try to use it as much as possible. Whether they wished it or not, accountants became involved. When they saw the results that were being achieved, many accountants became enthusiastic, although sometimes with an uneasy feeling that what they were starting to do was not really "accounting."

### *The Accountant's Place*

Granted the growth of these new methods has occurrred and will continue, what is the responsibility of the accountant?

The area that accounting theory usually has emphasized is only a part of the field of the measurement and use of economic values. There are many other aspects of measurement in business and government, such as population counts and the volume of physical trade. These call for the services of the statistician. Yet by far the greater part of business activity is and should be the realm of the accountant. Despite his lack of training and experience in model-building, he is basically better equipped by temperament and background to undertake this task than are the statisticians, the mathematicians, or the econometricians. So far these groups have held the new fields of Management Sciences, National Income, and so on, almost by default.

There are two major reasons for this:

(1) Up to the present time large-scale "Operations Research" models in business have tended to employ advanced mathematics. There is no need that the models be "advanced" in the majority of situations for which useful models can be built. Many break-even, make-or-buy, annuity, and cost calculations are already at a fairly sophisticated level. The men who make them are competent to make further progress in this direction.

(2) Accountants cannot avoid the need for more training in mathematics and in the use of electronic and mechanical equipment. The growing complexity of business

will require a more technical approach anyhow. For example, we need statistics for random sampling in auditing, economic theory for support of pricing methods, machines for data processing, and so on. As a consequence, the competent accountant of the future will have to have more of this type of training.

### *Theory in Management Accounting*

As a first step in developing theory in these areas, I propose an expanded concept of the framework of accounting. This framework should consider the basic content of accounting theory to include all the value measurements made for economic purposes. Therefore it should range from the goals desired by the manager through all the techniques the accountant can use to help the manager achieve these goals.

The following table lists the major sections of the proposed framework:

a. Choice of Goals
b Decision—Influencing the Future
c. Prediction
d. Description
e. Measurement
f. Review of the System

Accounting is an activity carried on in an economic, technological, and political environment. Since the purposes are complex, it is difficult to find phrases which describe them exactly. The accounting theorist must accept the fact that the purposes his system will serve are not adequately spelled out and that in a sense they are constantly changing.

In general, however, these purposes can be indicated by saying that the users of the accounting system are attempting to achieve some goal, to fill some want. While this goal may not be fully described by value considerations, there is considerable evidence that this is almost always possible to some extent. A person can measure his achievement to the extent that he can get a symbolic representation of his position and of the changes in that position.

As in many other types of activity, the purpose of accounting too often is taken for granted. In our efforts to produce all-purpose statements we sometimes satisfy almost no one. In particular, a manager who wants to use the data may have to struggle to interpret it; as, for example, when he wants to make a decision based on marginal costs and is given a statement which shows only average costs including an allocation of fixed items. It even happens that the accountant himself sometimes forgets and changes his viewpoint; he later makes use of records in a way that is difficult to justify.

This problem is a primary one for the improvement of accounting. It has engaged the attention of many researchers. Too often their efforts have not been as fruitful as they might have been, because they were not carried through by being linked in a logical way to the other parts of the "framework" list. An example is the use of historical cost data in making a decision that seeks to maximize current values.

Accountants are not alone in this failure to define purpose and relate it to techniques by means of theory. The difficulty has been so universal, even at basic levels of science, that it has led to widespread acceptance of the "operational" viewpoint proposed by Percy Bridgman a generation ago in *The Logic of Modern Physics*. Bridgman declared that the only way he could understand what was meant by length was to examine the operations performed in measuring the length of an object. Over thirty years ago Canning, in *The Economics of Accountancy*, declared that the purposes of accounting were so poorly defined than the only way to find out what an accountant meant by "Income" was to ascertain which procedures he adopted to measure it.

We need better definitions of the goals we are to seek, expressed in terms such

that we can not only measure our progress toward the goals but so we can also analyze our accounting system to determine how effective it is, and how it may be improved. To what extent does "income" measure the goals that administrators are trying to achieve? Gordon has underlined this problem and suggested some directions for further work in this area.[4] His emphasis on the attitudes and environment of the person who wants an income figure are in keeping with the framework under discussion.

*The Logical Structure—A Proposal*

Once a goal is chosen, the essence of the economic problem is to determine how to *influence the future* so as to reach the goal. The manager must make decisions and act in such a way that the goal will be achieved more completely than if he had acted otherwise. He must:

(1) Sense his environment, and store knowledge about it, mostly in the form of qualitative and quantitative relationships,
(2) Apply logical thought processes to manipulate these relationships so as to plan the operations he believes will lead to his goals,
(3) Perform and control operations and,
(4) Sense the effects of his operations in order to evaluate them, and to continue the cycle.

Most accounting emphasis has been on step (4). In the classic terminology of the American Institute of Certified Public Accountants, it has been on "recording, classifying, and summarizing . . . and interpreting."[5]

The expanded framework proposes increased emphasis on the other areas. The proposal is based on the following logical sequence:

(a) Goal-choice is derived from an understanding of human wants and desires and from knowledge of the environment.
(b) To reach a goal it is necessary to choose between alternative courses of action which are available or can be developed to become available. This activity can be summed up as "*decision*-making."
(c) To understand the significance of alternatives in a way that permits choice between them, it is necessary to *predict* the probable outcome of each alternative, in terms of the extent to which each will achieve the desired goal.
(d) To predict the probable outcome of an alternative we must *describe* the factors which will influence the outcome, measure their magnitudes, establish the relationships between them, and determine which of them can be influenced by our decisions and to what extent.
(e) To describe and measure the relevant factors we must perform basic procedures which are in large part common to other fields in which *measurement* is important. These include choice of a measuring unit, definition of the object to be measured, choice of measurement methods, the operation of measuring, recording and analysis of results, and so on.
(f) All the above must be linked by a logical framework which will meet the tests of objectivity, relative simplicity, and so on, that are applied to theory in all fields. This is the *review* that closes the loop and sets the stage for another cycle.

*Discussion and Suggestions for Research*

Whether or not the above framework is acceptable, the major contention of this essay is that accounting theory needs some such logical structure. Researchers should be able to see, for example, how their efforts to improve use of the measuring unit are linked to better definitions of income, and how both are needed for better evaluation of performance, which in turn can lead to better planning, and thus to better decision-making, and so to better fulfillment of some human want or desire. They need to appreciate the importance

[4] Myron J. Gordon, "Scope and Method of Theory and Research in the Measurement of Income and Wealth," THE ACCOUNTING REVIEW, October 1960, p. 603.

[5] Committee on Accounting Terminology, American Institute of Accountants, *Accounting Terminology Bulletin No. 1*, 1953, p. 9.

of multiple-mode selection in automatic processing of data, for flexibility in decision-making.[6]

The best methods of developing and testing the logical structure of a coherent body of theory have already been investigated many times. As Carl Devine has shown in his essay,[7] accountants have not made enough use of the work of researchers in other fields, and in the general area of logical analysis itself. This offers wide possibilities for research contributions of real value. We can benefit from a variety of approaches—from extensions of the algebraic work by Mattessich,[8] the management accounting of Vatter[9] and Anthony,[10] and management science.[11]

Each of the sections of the proposed theoretical framework can benefit from rigorous logical analysis. Goal choice is still difficult to qualify. Decision models and business games are no doubt only in the first stages of a substantial future; they may well become converted into simulation techniques which will be a major aid to tomorrow's manager. Budgets can be improved, measurement methods need investigation (particularly the changing measuring unit), and so on.

This type of development can be strengthened if we can obtain better designed electronic computers and other data-processing devices. Present equipment, though too cumbersome (despite its "speed"), has already broadened the horizons of the systems analyst. His responsibilities now go far beyond the straightforward data processing mechanisms of the firm. Yet most of this activity has mushroomed with little attention to underlying accounting theory. Present computers are based for the most part on designs developed for scientific computation. The experts in the field have for the most part tried to transfer procedures developed to account for much simpler economic situations and for hand-processing of data. We need a new and better generation of computers, designed to meet accounting needs more simply and less expensively.

Accountants will also have to improve their recording methods. The experience of the typical operations analyst is that regular accounting systems do not record or process the type of data he requires to build his models. Yet in many cases he can obtain the data by other means, so the data must be available. Since the decisions he helps the manager make are better than those made previously, the data must be needed.

Most accounting effort today falls into the "Descriptive" section of the proposed framework. We can assume that research in this area will continue unabated.

Almost untouched, by comparison, however, are the basic concepts of accounting, that it involves measurement and communication. Measurement is such a familiar process that we tend to take it for granted. This is a structural weakness, as has been found in many fields besides accounting.

Measurement is not a simple process. In fact there are many approaches to it, and various sciences have each tended to develop its own set of concepts. The American Association for the Advancement of Science held a symposium on Measurement, which has been published

---

[6] The concept of multiple-mode selection is more fully developed in *The Crisis We Face: Automation and the Cold War*, by George Steele and Paul Kircher, McGraw-Hill, 1960, Chapter VI.

[7] Carl Thomas Devine, "Research Methodology and Accounting Theory Formation," The Accounting Review, July 1960, p. 387.

[8] Richard Mattessich, "Mathematical Models in Business Accounting" The Accounting Review, July 1958, p. 473.

[9] William Vatter, *Managerial Accounting*, Prentice-Hall, 1950.

[10] Robert Anthony, *Management Accounting*, Irwin, 1960.

[11] See George Kozmetsky and Paul Kircher, *Electronic Computers and Management Control*, McGraw-Hill, 1956.

by Wiley, (1959)[12] In this volume, which gives a collection of addresses by researchers from various scientific fields, C. West Churchman, one of the editors, declares:

"In this sense, i.e., measurement taken as a decision-making activity designed to accomplish an objective, we have as yet no theory of measurement. We do not know why we do what we do. We do not even know why we measure at all. It is costly to obtain measurements. Is the effort worth the cost?"[12]

As for the field of communication, we have so far done most of our research at the level of report writing. We need to prove more deeply into the implications of such works as Paul Kecskemeti's ***Meaning, Communication, and Value***, (U. of Chicago Press, 1952), and works in the field of General Semantics.

*Conclusions*

It is hoped that this brief essay may encourage researchers, particularly younger men, who may sometimes feel that the field of accounting has been so thoroughly plowed that there are few plots left to conquer.

The truth is rather that we have only begun to understand accounting in terms of reference to its larger framework, its true place in human society. The problems that we face are immense. Business complexity seems to be growing exponentially. At the moment we are doing little better than Alice—running as fast as we can just to keep up. We need some substantial breakthroughs if we are to forge ahead, relatively, and these can only come from basic and profound contributions to accounting theory.

Our field, like the basic sciences, lives on the work of thoughtful men who set directions and established fundamental concepts. Unlike most fields, however, accounting has not honored or remembered its great names. Who invented "depreciation?" Who started "double-entry." "direct costing," "accelerated depreciation?" This indifference is a sure sign of the lack of maturity of our field.

The argument in this paper is not that all our present concepts are useless. Rather it is a question of broadening the basic field which accounting theory should investigate. Our purpose should be to place more emphasis on the fundamentals of measurement technique, communication, prediction, decision-making, and quantification of goal choice.

Only in this way can we hope to advance accounting as one of the vital activities in our society. Where the doctor brings health and the lawyer brings justice, the accountant can bring equity and understanding to economic progress.

[12] *Measurement: Definitions and Theories*, Editors C. West Churchman and Philburn Ratoosch, Wiley, 1959, p. 84.

# RATE OF RETURN: SOME COMMENTS ON ITS APPLICABILITY IN CAPITAL BUDGETING

VICTOR H. BROWN
*Touche, Ross, Bailey & Smart*

An ESSENTIAL phase of a rational capital budgeting process concerns appraising the profitability potentials of recognized opportunities for capital investment. Typically, management must decide upon an effective rationing of capital among the numerous capital proposals recommended to it for adoption. Profitability considerations are manifestly important in such decisions.

Appraising profitability requires explicit forecasting of the three determinants of each proposal's financial worth: (1) the proposal's economic life; (2) the capital outlay(s) required to adopt it; and (3) the amounts and timing of the revenues and costs resulting from its adoption. These capital outlays as well as revenues and costs should be estimated in terms of future, differential flows of cash or the equivalent.[1] Such forecasts alone, however, do not permit ready profitability evaluations and comparisons to be made. For this purpose, a direct measure or index of each proposal's projected profitability is needed. This paper comments upon the suitability of rate of return as such a measure and the extent to which rate of return analysis is applicable as a guide to sound capital investment decisions.

## *Rate of Return Determination*

While the notion of rate of return on investment is commonplace, the term is widely employed to describe a variety of historical and projected mathematical relationships between earnings and investment. In this paper, rate of return refers to that rate of interest which equates through time a project's anticipated cash flows with the initial capital outlay required to adopt it. A project's implied rate of return is thus that value of $i$ which satisfies the equation:

$$P=\frac{S_1}{(1+i)^1}+\frac{S_2}{(1+i)^2}\cdots+\frac{S_n}{(1+i)^n}$$

where

$P$ = the project's required initial capital investment;

$S$ = the project's cash throwoffs (i.e., net cash flows) in indicated future time periods (in any given time period $S$ may have a positive or negative value);

and

$n$ = the number of time periods in the project's economic life.

(If all values of $S$ are equal, this formula reduces to $P=S_{a_{\overline{n}|i}}$; the common formula for the present worth of an annuity.) If cash throwoffs are estimated on an annual basis, the project's rate of return is an annual rate of compound interest.

It may be noted that annual cash flow estimates are satisfactory for most proposals, but shorter time periods may be more appropriate for certain projects contemplating significant intrayear cash flow irregularities.[2] (Such irregularities may be

---

[1] For a discussion of the cost and revenue constructions relevant for capital budgeting purposes, see American Accounting Association Committee on Cost Concepts and Standards, "Tentative Statement of Cost Concepts Underlying Reports for Management Purposes," THE ACCOUNTING REVIEW (April, 1956), pp. 182–93, and Edward L. Wallace, "Some Comments on the Statement of Planning Costs," THE ACCOUNTING REVIEW (July, 1957), pp. 448–66.

[2] A point to note is that the above formula presumes that each year's cash flow will obtain at the end of the year. If cash flows are projected on an annual basis but are expected at regular intrayear intervals (e.g., monthly collections of customer accounts), more refined formulas can be used to obtain more exact rate

expected, for example, from projects involving sales of products with highly seasonal sales patterns.) If shorter than annual periods are used, however, it is desirable to convert the resulting rates of return to annual effective rates for interpretive reasons. Executives are accustomed to thinking in terms of annual planning periods.

Rate of return determination explicitly considers all three determinants of a proposal's financial worth and ignores external considerations such as the cost of the capital required to adopt the proposal. Via the discounting procedure, the time value of money is taken into account. A proposal's expected profitability is expressed in a single figure representing the average annual rate of compound interest at which the project's initial investment is expected to be "recovered" through cash flow generation. These attributes suggest the possible applicability of rate of return analysis for capital budgeting purposes.

### *A Capital Budgeting Tool*

Expressing profitability potentials in rate of return terms enables financial worth comparisons and rankings of capital proposals of all types to be made in a uniform and intelligible fashion. Comparative profitability evaluations are important in appraising conflicting, or mutually exclusive, proposals. A consistent system for ranking competing projects facilitates top management selection of a desirable mix of capital investments.

A comment on the above distinction between conflicting and competing projects is in order. Conflicting proposals are alternative to one another; the selection of one such project signals the rejection of all others. A company considering whether to make or buy a particular item, for example, is confronted with two conflicting proposals. Competing projects are those which are not mutually exclusive. While these projects collectively "compete" for available capital, a decision to adopt any individual competing proposal does not per se preclude the acceptance of others. A proposal to expand foreign operations and another to buy new accounting equipment for the home office, for example, are competing—the company may well decide to adopt both. A rigid dichotomy between conflicting and competing projects, of course, is impossible since many projects are partially substitutable for others. However, a practical distinction between the two types is useful for evaluation purposes.

Applied to assess the relative profitability of conflicting proposals, rate of return analysis can guide the selection from among them. As a common denominator of economic worth, rate of return permits ranking competing proposals in descending order of their expected profitability. This array gives management a systematic examination technique for evaluating known demands upon available capital. Conceptually, management can maximize corporate profits by selecting each ranked proposal with a rate of return exceeding the company's cost of capital.[3] As a practical matter, of course, such an automatic cutoff procedure is quite inappropriate; a high order of management judgment is required in selecting capital investments. However, rate of return analysis and knowledge of the firm's cost of capital can provide a rational basis for formulating these judgmental decisions.

Administratively, top management can employ rate of return as a screening device to shield it from a deluge of undesirable capital requests by supplying lower management levels with a minimum acceptable rate of return. This procedure tends to

---

of return values. See, for example, Charles Christenson, "Construction of Present Value Tables for Use in Evaluating Capital Investment Opportunities," The Accounting Review (October, 1955), pp. 666–72.

[3] This statement is valid in principle only if, as will be discussed subsequently, appropriate assumptions concerning the profitability of cash flow reinvestments are made in determining the rates of return used to rank competing proposals.

force explicit divisional recognition and forecasting of the relevant determinants of a proposal's economic worth as well as to assure company-wide uniformity in profitability appraisals. Knowledge that an objective profitability index is employed by top management in rationing capital can also prove beneficial to morale at subordinate management levels.

While the above merits of rate of return as a guide to budgeting capital are substantial, it is important both to recognize the complexities involved in effectively employing the analysis and to be aware of its limitations. These complexities and limitations can be examined in terms of both conceptual considerations with practical ramifications and administrative considerations.

## CONCEPTUAL CONSIDERATIONS

### *The Reinvestment Assumption*

An assumption concerning the profitability of cash throwoff reinvestments is always made in rate of return evaluations. If no *explicit* contrary assumption is made, profitability conclusions drawn from rate of return comparisons are based upon the *implicit* assumption that each project's cash flows will be indefinitely reinvested at the same rate of return as that directly implied by the project itself.

For example, assume that adopting either Project A *or* Project B would require a $100,000 initial investment; and that Project A would generate a single $150,000 cash sum at the end of one year, while Project B would produce approximately $54,800 in cash annually for six years. A 50% annual rate of return is directly implied by each proposal. Which project is the more attractive, however, depends upon the rate(s) of return at which cash throwoffs can be reinvested. Project A would be the more attractive if all cash throwoffs were reinvested at greater than a 50% rate of return, conversely, it would be the less attractive if the reinvestment rate were less than 50%.[4] The inference that the proposals are equally profitable because each has a 50% implied rate of return is *absolutely* valid only if *indefinite* cash flow reinvestments at 50% rates of return are presumed. This inference, however, is *practically* valid if cash flow reinvestments are expected to earn 50% for fairly limited (as opposed to indefinite) future time periods. (Via the discounting procedure distant cash throwoffs and resulting reinvestments are weighted much less heavily than near ones.)

Recognizing the need for some assumption concerning the profitability of cash flow reinvestment is of particular practical importance in evaluating conflicting investment proposals. This is especially true if their economic lives and/or their cash flow time patterns are expected to differ significantly. Factors related to the financial outcome of alternative projects should be appraised on a comparable basis. Thus, for example, evaluations of conflicting projects with different anticipated life spans should be made for comparable time periods. This necessitates a consideration of the profitability of reinvestments of the shorter-lived project's cash throwoffs.

---

[4] To illustrate, assume a 10% reinvestment rate. If Project A's $150,000 cash throwoff were reinvested at 10%, a capital sum of $241,650 would accumulate six years after the project's adoption [$\$150{,}000(1.10)^5$]. If Project B's cash throwoffs were reinvested at 10%, a capital sum of approximately $422,800 would obtain six years after the project's adoption

$$\left[\$54{,}800\,\frac{(1.10)^6-1}{.10}\right].$$

Considering the two projects over a six year period and taking explicit account of the expected 10% reinvestment rate, one can determine Project A's implied rate of return to be approximately 15% [$\$241{,}650=\$100{,}000(1+i)^6$; $i=15\%$] and B's implied rate of return to be approximately 27% [$\$422{,}800=\$100{,}000\ (1+i)^6$; $i=27\%$]. Project B is thus more attractive.

Identical capital sums would accumulate at the end of six years only if the reinvestment rate were exactly 50%. But since accumulations would probably not be entirely available in liquid form at the end of six years, an assumption concerning *indefinite* cash flow reinvestment is theoretically necessary, as noted in the text.

While precision in forecasting reinvestment rates is admittedly impossible, management may, with varying degrees of confidence, wish to make explicit reinvestment rate assumptions different from that implicitly made in direct rate of return comparisons. For example, management may have definite expectations concerning the profitability of proposals that it believes are feasible for the near future. These expectations should be explicitly substituted for the implicit reinvestment rate assumption.

In evaluating ranked competing proposals, it is usually impossible, even with the best of forecasts, explicitly to estimate the profitability of cash flow reinvestments on an individual project basis. This is because cash flows available for reinvestment at any particular time are typically derived from numerous projects and constitute a homogeneous pool of capital at management's disposal; identification of specific segments of this pool with individual reinvestment proposals is possible on only an arbitrary basis. Thus, in appraising most competing opportunities the implicit reinvestment assumption appears to be the most reasonable one that can be made since, over time, a company appears most likely to maximize profits by continually selecting those proposals with the highest directly implied rates of return. This is a practical approach which is generally appropriate.[5]

In individual appraisals of particular competing proposals, however, the implicit reinvestment assumption may be inappropriate. For example, the feasibility of certain foreseeable future proposals may be contingent upon the adoption of certain present alternatives (e.g., a plan to construct a plant one year hence may require the present reservation of liquid capital). In such cases explicit account should be taken of the future proposal's profitability potential in determining a rate of return measure for the present alternative.

The point to note is that while management may deem the implicit reinvestment rate assumption satisfactory in many cases, other situations arise where this assumption is clearly unsatisfactory. In such situations, a more appropriate explicit assumption should be made and taken into account in rate of return determination.

### *Unequal Initial Investments*

Implied rates of return are ***directly*** comparable only if they are computed for proposals requiring equal initial investments. Project A's 20% implied rate of return, for example, cannot directly be compared with the 26% rate implied by Project B if the projects require initial investments of $100,000 and $40,000 respectively. Which project is more profitable depends upon the rate of return that would be earned upon (or not have to be paid for the use of) the differential $60,000 that would be "available" if Project B were accepted. Only if this differential rate were exactly 16% would the two projects be equally profitable.[6] (And this is true only if the implicit reinvestment assumption noted above is appropriate.)

This observation is of small consequence in appraising competing investment proposals since direct comparative evaluation of individual projects is not required. In evaluating conflicting projects, however,

---

[5] Theoretically, ranked appraisals of competing proposals could be avoided entirely by immediately attacking the ultimate problem of selecting desirable *combinations* of investment opportunities. That is, one might initially determine, on a quantitative basis, an optimum mix of present and future investment proposals. Practically, however, mix considerations must await initial evaluations of competing proposals on an individual basis.

[6] This is because 20% on Project A's $100,000 is equivalent to 26% on Project B's $40,000 *plus* 16% on the differential $60,000. Assuming all proposals to have infinite lives and to generate equal annual cash flows, $20,000 annual cash flows would result in either case. (20%×Project A's $100,000=$20,000. 26%× Project B's $40,000=$10,400; 16%×$60,000=$9,600. $10,400+$9,600=$20,000.)

recognizing the inability to compare effectually rates of return computed for unequal investments is quite important. Conflicting proposals typically require unequal capital outlays and must be evaluated on comparable bases.

Rate of return analysis can be adapted satisfactorily to evaluate conflicting proposals by means of the "incremental added investment method." This procedure involves the following three steps:

1. Determine the rate of return implied by the proposal requiring the smallest initial investment.
2. If this rate is equal to or greater than the relevant cost of capital,[7] compute the rate of return implied by the *incremental* capital needed to adopt the proposal requiring the next largest initial investment. If the resulting rate equals or exceeds the cost of capital, drop the first project from further consideration. Using the second project as a new standard, repeat this incremental approach until only one proposal remains. This is financially the most attractive project.
3. If the first rate of return computed in Step 1 is less than the cost of capital, reject the first project and determine the rate of return implied by the *total* investment needed to adopt the proposal requiring the next largest initial investment. If this rate at least equals the cost of capital, use this proposal as a standard and proceed as in Step 2; if this rate is less than the cost of capital, reject the proposal and compute the rate of return implied by the project requiring the next largest initial capital outlay. Repeat this process until either: (a) no conflicting proposal appears satisfactory; or (b) a single project emerges as the most desirable.

This adaptation of rate of return analysis is straightforward and can serve satisfactorily to evaluate conflicting investment opportunities. Care, however, is required in applying this procedure in individual situations. Three points are especially worthy of note. First, judicious selection of a relevant cost of capital measure is necessary. Second, careful and logical measurement of the differential cash flows expected from successive incremental investments is essential. This can be a somewhat complicated process involving initially a recognition of the appropriate alternatives to include within a set of conflicting proposals. (Frequently overlooked alternatives, for example, are the possibility of doing nothing at all and that of deferring the adoption of any particular proposal.) Third, some incremental investments (and, less frequently, some individual proposals) can have more than one directly implied rate of return. Appropriate *explicit* reinvestment assumptions must be made in developing usable rate of return measures in these instances.

Further comment on this last point is in order. An investment expected to produce cash flows of both positive and negative amounts can have more than one directly implied rate of return; the maximum number of implied rates is equal to the number of sign (i.e., positive or negative) changes in the net cash flows.[8] For example, Project C requires a $10,000 initial outlay (a negative cash flow) and will produce three cash throwoffs as follows: Year 1, $60,000; Year 2, −$110,000 (negative); and Year 3, $60,000. This project has three implied rates of return (0%, 100%, and 200%)—the maximum number possible since there are three reversals of cash flow signs. Manifestly, this illustrative proposal

[7] Fundamentally, the relevant cost of capital is an "opportunity cost," indicating the higher of: (1) the return that could be earned upon this capital by commitment to the best alternative project; or (2) the firm's market cost of capital (the cost of obtaining and/or retaining funds for employment within the business as a whole).

[8] The point that proposals may have more than one implied rate of return is made and more fully discussed by James H. Lorie and Leonard J. Savage in their article, "Three Problems in Rationing Capital," *Journal of Business* (October, 1955), pp. 236–38. These authors also discuss the procedure outlined above for evaluating conflicting proposals (*Ibid.*, p. 239).

The points that proposals can conceivably have more than two directly implied rates of return and that the number of possible rates depends upon the number of sign reversals in the estimated cash flow stream are made by Jack Hirshleifer, *An Isoquant Approach to Investment Decision Problems* (Santa Monica: Rand Corporation, Report P-1158, August, 1957), p. 38.

does not have three different valid indices of profitability.

Valid rate of return measures can be developed for projects with multiple directly implied rates of return by initially explicitly assuming appropriate reinvestment rates. To illustrate, the proposal cited above has a *unique* $4\frac{1}{2}\%$ rate of return if a 10% reinvestment rate is assumed [cash throwoffs amount to \$11,400 in three years; $\$10,000\ (1+i)^3 = \$11,400$; $i = 4\frac{1}{2}\%$]. With an assumed 50% reinvestment rate, the project has a unique 44% rate of return [a capital sum of \$30,000 obtains from the cash throwoffs after three years; $\$10,000\ (1+i)^3 = \$30,000$; $i = 44\%$]. These resultant rates of return are unique and are valid profitability indices.

Individual competing, as well as conflicting, proposals with multiple rates of return are relatively rare. Differential cash flows developed for incremental investments, however, may well assume peculiar shapes through time. If projected cash flows alternate between positive and negative amounts, care must be taken to assure the use of unique rate of return measures.

### *Cash Budgeting and Cost of Capital Considerations*

Rate of return analysis is designed for evaluating profitability. Since rates of return are based on initial investments, subsidiary account is also taken of the immediate cash outlays required by investment proposals. However, since rates of return measure only *average* cash flow relationships expected over time, the analysis must be supplemented by future cash availability considerations. Many projects require substantial capital outlays, both present and future, prior to their expected generation of net cash inflows. The developmental and promotional work necessary to introduce a new product line, for example, may require several years of cash outlays before positive cash throwoffs materialize. Management must not only appraise the rates of return implied by such proposals, but must also examine the present and future availability of the capital needed to execute the proposals satisfactorily. Failure to do so can lead to unfortunate results—conceivably bankruptcy—prior to the receipt of net cash inflows. Profitability analysis and cash budgeting must thus be interrelated processes.

As noted previously, a company's cost of capital must be determined if rate of return analysis (or any other discounting procedure) is to be employed effectively. It will be recalled that a measure of this cost is needed for at least three purposes: (1) to serve as a subordinate level screening rate; (2) to be used in assessing the relative profitability potentials of conflicting proposals; and (3) to serve as a logical cutoff point in top management selection of competing projects.

Determining cost of capital is an extremely complex problem, the dimensions of which can only be suggested here. Since capital budgeting, by definition, involves choosing future courses of action, it is a *future* cost of capital which is needed. But some value judgments concerning management's conception of the firm's principal objective(s) must be made initially to establish a viewpoint from which this cost can be measured. One might, for example, measure cost of capital differently if management's primary goal were viewed as maximization of corporate net worth than if maximization of returns to shareholders were considered management's prime objective. (Especially is such a divergence in measures possible with respect to the cost of equity capital.)[9] Other

[9] Contrast, for example, the measures of equity capital cost suggested by Myron J. Gordon and Eli Shapiro ("Capital Equipment Analysis: The Required Rate of Profit," *Management Science* (October, 1956), pp. 102–10) with that suggested by Ezra Solomon ("Measuring a Company's Cost of Capital," *Journal of Business* (October, 1955), pp. 240–52).

theoretical questions arise concerning precisely what a cost of capital measure should measure. For example, should the cost of capital indicate the cost of the company's "permanent" capital, or should it represent an average cost of capital obtained from all sources? And, presuming agreement concerning the company's objectives, what cost should be assigned to internally generated capital—to capital obtained externally?

Answers to the above questions are necessary to ascertain what a cost of capital measure should signify. Once agreement on this point is reached, a host of practical problems arise concerning how such a measure can be determined, or at least approximated. For present purposes, it is sufficient to observe that approximation of a company's cost of capital is a prerequisite to the logical use of rate of return analysis. (The word "approximation" is intentionally used since, as a practical matter, minor errors in estimating cost of capital may be inconsequential. For example, management may, uncertainties considered, require that certain types of proposals have rates of return considerably in excess of the company's cost of capital to justify their acceptance.)

*Uncertainty Considerations*

Uncertainties attend the forecasts made of virtually every proposal's cash flows. These uncertainties stem from the lack of definite knowledge concerning the future behavior of the many factors, economic and with economic implications, bearing upon each proposal's financial outcome. While some of these factors, such as the future general level of economic activity, are of a "common" nature, since their projected behavior serves as a common planning premise in estimating numerous proposals' cash flows, other factors more uniquely influence the profitability of specific projects. The combinations of important factors affecting cash flow forecasts vary from project to project. Therefore, uncertainties must initially be appraised on an individual project basis.

A high degree of "experienced judgment" is needed in weighing uncertainty elements against profitability potentials. Efforts to incorporate uncertainty considerations into rate of return analysis are possible. For example, one may weigh estimates of initial investments and cash flows by probability factors before determining rates of return.[10] Such efforts, however, do not obviate the need for exercising judgment; they merely partially advance the time when it must be exercised. The aforementioned probability factors, for example, typically must be projected on a judgmental basis.

Certain data supplemental to rate of return analysis can assist management in formulating these necessary judgments. Information concerning the major planning premises assumed in forecasting cash flows is important. Explicit statement of the assumptions upon which cash flow estimates are based, tends to assure management recognition of the major uncertainty elements present in each situation. Further, it may be useful to present management with a range of estimated rates of return for particular projects—the range limits constituting what are deemed to be probable forecasting error limits. Related to the notion of forecasting error limits is another potentially useful technique involving expressing the "permissible degrees of error" which may be inherent in forecasts of a project's cash inflows and/or outflows (or particular segments thereof) without signaling the project's undesirability. For example, it might be determined that a project's actual cash inflows could be less than its projected cash inflows by as

[10] This sort of procedure is suggested by Powell Niland in his article, "Investing in Special Automatic Equipment," *Harvard Business Review* (November-December, 1957), pp. 73–82.

much as 9% and the project would still meet management's minimum standard of acceptability. Given this 9% permissible degree of error, management can subjectively estimate the probability of an error of this magnitude being inherent in forecasts of the project's cash inflows. If it desired, management could further weigh its subjective probability judgments against mathematically determined indifference probabilities.[11]

Explicit consideration of the possible penalties resulting from various forecasting errors can also be useful in uncertainty appraisals. Maximum possible loss computations, for example, enable management to assess what would happen to the company's cash position should a particular proposal's projected cash inflows fail to materialize. As a further example, data concerning the amount of initially invested capital which could be recouped in case of abrupt termination of a proposal's economic life are doubtless important in certain choices, such as the selection of general purpose rather than special purpose equipment.

Payoff computations can also convey significant information in evaluating uncertainties. Given two conflicting proposals with equal rates of return, management may prefer the one with the shorter payoff period because of greater confidence in cash flow estimates made for nearer future years.

Each of the quantitative techniques mentioned may possess certain usefulness in assessing the uncertainties surrounding particular proposals. None of them, however, eliminates the need for informed judgment.

### *The Infinite Rate Problem*

Rate of return analysis is particularly suited for evaluating proposals requiring initial investments of substantial size relative to expected net cash inflows. Some proposals, however, involve small *initial* capital outlays but commit the firm to substantial *future* outlays. Projects contemplating the rental of facilities and purchase-lease back arrangements exemplify proposals of this type. These projects may have exceedingly large implied rates of return; infinite rates are conceivable.

Ascribing practical meaning to very large or infinite rates of return is most difficult. To illustrate, suppose a firm is considering purchasing an existing business expected to produce $20,000 annual net cash flows. The present owner is asking $100,000 for his business, but, for personal tax reasons, wishes to be paid $10,000 annually for ten years, beginning one year hence. The project thus requires no initial investment; its implied rate of return is infinity—infinitely larger than its 20% rate of return if immediate payment of the purchase price were required. From the purchaser's viewpoint, paying the purchase price over time is more desirable than immediate payment, but it is not infinitely more so. In both cases, similar uncertainties exist concerning forecasts of the business' cash inflows while no uncertainty is present concerning the contractual need for paying the purchase price. It is difficult to give practical meaning to the project's infinite rate of return.

The infinite rate problem assumes minor importance in evaluating conflicting proposals; the incremental investment approach outlined previously can be meaningfully used in evaluating these projects whether or not one of them has an infinite rate of return. It is in appraising competing proposals that the problem becomes practically significant. All competing projects with infinite rates of return appear highly attractive. Yet, management may not

[11] See Edward G. Bennion, "Capital Budgeting and Game Theory," *Harvard Business Review* (November-December, 1956), pp. 115–23 for a discussion of the possible applicability of the indifference probability concept in managerial uncertainty evaluations.

wish to accept all of them because of their somewhat peculiar uncertainties—viz., uncertain net cash inflows and contractually required capital outlays.

In principle, rate of return analysis can be adapted to appraise certain of these sorts of competing proposals. A proposal's initial investment might be defined as not only the required immediate cash outlay but also the presently available capital that management would reserve to assure the requisite liquidity to meet the *future* cash outlay commitments caused by adopting the project. Reservations of present capital may be considered a prudent safeguard against the possibility that the proposal's estimated net cash inflows will not materialize. Practically, however, implementing this procedure is difficult except for projects requiring exceptionally large future capital outlays. For other projects it is next to impossible to estimate on an individual project basis amounts of present capital reserved for precautionary reasons.

The above procedure is only one way to treat the special uncertainty problems posed by projects with extremely large or infinite rates of return. Others may be more appropriate in particular cases. The point to be noted is that cash budgeting and uncertainty considerations are dominant in appraising these proposals—more important than the direct indications of rate of return analysis.

### *Mix Evaluation*

In evaluating and selecting investment proposals, management's objective is to select an optimum *mix* or *complex* of capital investments. As noted previously, practical considerations do not permit this objective to be assessed directly in evaluating investment opportunities. Rather, proposals must initially be appraised and tentatively selected on an individual project basis.

Rate of return rankings of competing proposals can facilitate evaluating various investment mixes. However, investment complexes selected only on the basis of individual project evaluations may be unsatisfactory for at least four reasons: (1) The distinction between conflicting and competing projects is not absolute. Thus, there may be interrelationships among decisions to accept particular competing proposals and the cash flow values projected for other competing proposals. These interrelationships, ignored in individual evaluations, may be quite important; (2) The initially indicated complex may require an excessive future drain on the company's cash resources; (3) The initial mix may require the firm to assume collectively unfavorable uncertainties; and (4) The aggregate mix may not lead the company in what management believes to be a desirable direction. The indicated mix may, for example, comprise replacement proposals entirely; management may consider other types of projects (e.g., product diversification projects) as equally essential to the company's future well-being. Therefore, appraisals of entire complexes of investment proposals are necessary.

A workable general quantitative solution to the problem of selecting an optimum mix of capital investments is presently unavailable, and in large measure evaluating possible investment mixes must be on a qualitative basis. However, two admittedly imprecise quantitative procedures can be useful for this purpose. First, a tentatively selected investment mix can be tested within the framework of the financial accounting model. Thus, management can assess the impact that integrating a complex of proposals into over-all corporate operations will have upon the company's financial statements, which, in part at least, measure over-all corporate success.

The second procedure involves top man-

agement stipulation of a desirable percentage apportionment of total capital investment among various categories of proposals. Both the scheme used to categorize projects and the percentage breakdown developed should reflect the factors which management deems important to the particular company's future. For example, the management of a chemical company, believing that new product development is of vital importance to continued corporate success, may decide that, say, 25% of all new capital investments should be in a research and development category. Qualitative judgment is required to implement this procedure, and unthinking adherence to the indicated percentage apportionments should not be demanded. Judiciously applied, however, the procedure can be useful not only in top management evaluations of investment mixes but also in stimulating lower management level searches for desirable investment opportunities.

## ADMINISTRATIVE CONSIDERATIONS

Attention has thus far centered upon the rate of return concept itself, the care which must be exercised in applying the concept, and the limitations upon the concept's applicability as an exclusive, or in some cases even a dominant, capital investment selection device. Administrative problems can also arise in introducing and using rate of return analysis as a primary profitability evaluation technique.

### *Educational and Personnel Considerations*

To persons unfamiliar with the concepts and procedures involved, rate of return analysis initially appears unduly complex. Further, these persons may find the results of the analysis difficult to interpret meaningfully. Substantial persuasive and educational efforts may thus be necessary in introducing this analysis and in assuring its appropriate use.

It is relatively easy to convey to persons a superficial knowledge of the meaning of implied rate of return and its manner of computation. Indeed, computing rates of return can be a very simple process. Charts and tables, for example, can be developed for use by clerical personnel to compute rates of return implied by projects in the common case where uniform net cash inflows are expected.[12] Assuring that persons really ***understand*** rate of return analysis and its ramifications, however, is a more difficult educational problem.

Happily, it is not essential that *all* company personnel charged with evaluating investment proposals understand rate of return analysis *fully* to use it satisfactorily. Low level screening and evaluations of repetitive types of proposals, for example, can be effectively accomplished by means of fairly mechanistic applications of the analysis. (In these cases, of course, it is still necessary that relevant cash flows be estimated as accurately as possible.) However, it is important that the areas wherein mechanical use of rate of return analysis is permitted be strictly delimited. Otherwise, investment decisions based upon erroneous evaluations of financial worth are quite possible.

Personnel with a real understanding of the concepts and techniques involved are needed to define judiciously the types of proposals amenable to rote application of rate of return analysis as well as to analyze the financial attractiveness of non-routine types of investment projects. These individuals should also be able to present meaningfully the results of their analyses to the executives responsible for making investment decisions. Such personnel should possess analytical ability and

[12] See, for example, Ray I. Reul, "Profitability Index for Investments," *Harvard Business Review* (July-August, 1957), pp. 116–32.

should be conversant with company problems and administrative practices.

*Potential Control Problems*

The top managements of some multi-division companies employ a variant of the rate of return concept in appraising divisional financial performance. Thus, divisional managers may be expected to strive for as high a ratio as possible between reported divisional earnings and the gross (or net) book value of the assets assigned to their divisions.

Two potential problem areas suggest themselves if rate of return is employed both as a control mechanism and as a profitability appraisal device. First, the definitions of rate of return commonly used to assess performance do not depict the rate of return concept discussed here as a measure of financial worth. The concept must be defined to suit the purpose for which it is intended. Secondly, the managers of more profitable divisions may be reluctant to recommend projects meeting a company-wide standard of acceptability if the adoption of these projects would lower divisional rates of return. Coping with this type of problem requires intelligent administration of the rate of return control mechanism as well as structuring controls supplemental to rate of return. (For example, a division may be expected not only to show a satisfactory rate of return but also to maintain its market position.)

*Post-Selection Evaluations*

After capital investment are selected, it is desirable periodically to examine how closely projects' actual initial investments and subsequent cash flows correspond to their previously estimated amounts. This is useful for three reasons: (1) to assure integrity on the part of individuals charged with making forecasts; (2) to discern past legitimate forecasting errors so as possibly to improve future forecasts; and (3) to permit prompt revisions of financial plans on the basis of differences between expected and actual cash flows thus disclosed.

Assembling information relevant in making useful post-selection evaluations, however, requires efforts additional to those normally required in accumulating financial accounting data. Conversion of these latter data to a cash flow basis is necessary. Post-selection evaluations are further complicated by the fact that cash flows are projected in differential terms for profitability appraisal purposes. The accuracy of differential forecasts is somewhat difficult to verify even after a proposal has been executed.

## ALTERNATIVE EVALUATION TECHNIQUES

The aforementioned limitations of rate of return as a capital investment selection criterion as well as the many considerations, conceptual and administrative, required in applying the concept effectively are important and deserve explicit recognition. Intelligently applied, however, rate of return analysis is a useful capital budgeting tool. This is apparent when the shortcomings of alternative evaluation methods are considered.

*Payoff*

Payoff, defined as the length of time within which the summation of a proposal's net cash inflows are expected to equal (and thus "pay off") its required initial investment, is probably the most widely used capital investment selection criterion. The payoff concept is very easily understood and, as noted before, is an adjunct computation which can be useful in uncertainty appraisals. As a measure of financial worth, however, payoff has two egregious deficiencies: (1) the device ignores cash flows expected beyond a proposal's payoff period; and (2) payoff

ignores possible cash flow time pattern irregularities expected within a project's payoff period.

*Rate of Return Variants*

Another popular evaluative device is "rate of return" defined as the ratio of a proposal's projected average annual (or first year) ***earnings*** to either: (1) the proposal's total required initial investment; or (2) the average amount of capital expected to be committed to the proposal. These "rates of return" are invalid as profitability measures for several reasons. First, the earnings estimates used typically differ from relevant cash flow forecasts. Depreciation expense, for example, typically is deducted in estimating earnings, but is irrelevant in cash flow forecasting (except as it affects income taxes which, of course, are relevant cash outlays). Secondly, because these measures ignore the time value of money, they are insensitive to variations in expected cash flow time patterns. Further, neither of these "rates of return" reliably approximates proposals' implied rates of return. Thus, neither is a reliable index for financial worth appraisals.

*Other Discounting Methods*

A third group of profitability evaluation techniques comprises methods which, like rate of return, use the discounting process and require relevant forecasts of proposals' initial capital outlays and subsequent cash flows. Present worth and capitalized cost analyses are outstanding examples. These methods differ from rate of return analysis in that, prior to their application, management stipulation of each proposal's minimum acceptable rate of return is necessary.

These methods can provide theoretically satisfactory indications of profitability potentials. (Indeed, it has been shown that in theory, given a presently non-existent degree of knowledge concerning future capital costs, the straightforward present value rule is superior to the ordinary internal rate of return rule in appraising projects' financial worth.[13]) On administrative grounds, however, these methods appear to have two shortcomings vis-a-vis rate of return analysis. First, obtaining necessary ***advance*** executive agreement on each proposed investment's minimum acceptable rate of return (the interest rate at which expected cash flows should be discounted) is administratively difficult and certainly time consuming. Since uncertainties vary from project to project, this advance agreement would be necessary on virtually an individual project basis. Secondly, the interpretational problems posed by alternative discounting methods seem more difficult than those presented by rate of return.

To illustrate this second point, suppose that a proposed new machine costing \$20,000, is expected to effect annual net cash operating cost savings of \$6,000 during its estimated six year economic life. Assuming a 10% minimum attractive rate of return, present worth analysis can be applied as follows:

Differential present worth

$$= \$6{,}000_{a_{\overline{6|}.10}} - \$20{,}000 = \$1{,}775.$$

Explaining to management why this positive differential present worth indicates the proposal's attractiveness may pose difficulties; it appears easier to explain that the proposal's implied rate of return (approximately 13%) exceeds the 10% minimum attractive rate. Meaningfully comparing this proposal's financial worth with that of competing projects is even more difficult in present value terms. These comparisons are possible by ranking proposals in descending order of their present worths ***per dollar of initial investment***.[14] Rate of return rankings appear more understandable.

---

[13] Jack Hirshleifer, *op. cit.*, pp. 30–44.
[14] See Lorie and Savage, *op. cit.*, p. 231.

## CONCLUSION

The rate of return concept strongly recommends itself for application in evaluating capital investment proposals. As a quantitative profitability appraisal technique, rate of return has substantial merits not possessed by alternative methods of assessing financial worth, which suggest the integration of the analysis into a comprehensive system for planning and controlling capital investments.

Rate of return, however, is not an appropriate exclusive, or in particular cases a prime, capital investment selection criterion. Rather, it is a useful tool, and as such should be used with full recognition of its shortcomings and limitations. Applied mechanistically, it can lead to unfortunate investment decisions (except where appropriate constraints have been imposed upon its mechanistic use). In common with many other analytical tools, its use will yield benefits only in proportion to the understanding with which it is applied.

# OVERHEAD COSTS AND INCOME MEASUREMENT

William L. Ferrara
*Assistant Professor, University of Illinois*

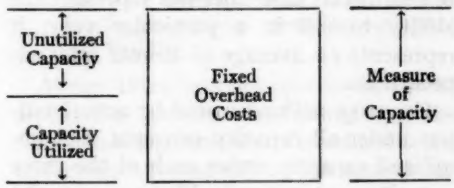
At the present time there are two basic assumptions involved in the accounting for manufacturing overhead costs as it relates to income measurement. These assumptions are:

1) A fixed-variable cost segregation is best for income measurement purposes.
2) Unit costs should not be allowed to vary with volume.[1]

The fixed-variable cost separation is admitted to be a difficult process, but as usual, all that is asked of practitioners is to do the best that can be done in a difficult situation. Once the cost elements are separated into fixed and variable components, each group (fixed and variable) can be allocated to production on appropriate bases, e.g., variable costs on the basis of actual service and fixed costs on a readiness to serve basis. The readiness to serve allocation for fixed costs is based on a number of different measures of plant capacity or readiness to serve.

Under each measure of capacity, variable overhead costs would be allocated to products on the basis of actual output. Presumably each unit of output is charged with those elements of variable overhead to which it gave rise. *All* variable overhead would thus be allocated to output, for without output there would be no variable overhead costs. Under each capacity measure, fixed overhead allocated to production is represented by the portion of capacity utilized multiplied by the fixed costs. The method of capacity measurement affects the measure of utilized capacity costs.

Allocation of fixed costs under three of the most commonly mentioned capacity measures (practical capacity, normal capacity, and cycle capacity) can be illustrated by the following diagram.




Fixed overhead costs associated with unutilized plant capacity are called idle capacity costs which are treated as a loss since they are considered a form of waste. Fixed overhead costs associated with utilized plant capacity are considered costs of production and thus as an element in the computation of inventory values and cost of goods sold.

The meaning of "measure of capacity" for each of the three capacity concepts would be as follows:

| *Capacity Concept* | *Measure of Capacity* |
|---|---|
| Practical | Physical Output Potential (maximum theoretical capacity less expected idle time and other expected operating interruptions.) |
| Normal | Average Sales Expectations |
| Cycle | Average Sales Expectations |

[1] A few examples of accounting literature in which these assumptions are explicitly or implicitly stated are:

R. Lee Brummet, *Overhead Costing*, Michigan Business Studies, Vol. XIII, No. 2 (Ann Arbor, Michigan: University of Michigan, 1957), pp. 59–72.

William J. Vatter, "Accounting Measurements of Incremental Costs," *The Journal of Business*, XVIII (July, 1945), p. 156.

Charles F. Schlatter and William J. Schlatter, *Cost Accounting*, 2nd ed. (New York: John Wiley and Sons, Inc., 1957) pp. 401–4.

Adolph Matz, Othel J. Curry, and George W. Frank, *Cost Accounting*, 2nd ed. (Cincinnati: South-Western Publishing Company, 1957), pp. 263–273.

Practical capacity thus represents the physical ability of the plant to produce during the regular working hours with special allowances made for expected operating interruptions. These expected operating interruptions do not include those caused by inability to sell. Practical capacity is based solely on ability to produce. On the other hand normal and cycle capacity represent ability to sell. Ability to sell in this case does not represent the ability to sell in a particular year; it represents an average of annual sales expectations.

Capacity utilized would be actual output under all capacity concepts, and unutilized capacity under each of the three capacity concepts would represent the following:

| *Capacity Concept* | *Meaning of Unutilized Capacity* |
|---|---|
| Practical | Idle capacity in a strict physical sense, considered a loss. |
| Normal | Idle capacity due to less than average use of fixed assets, considered a loss. |
| Cycle | Unused costs due to less than average use of fixed assets, considered deferred fixed costs to be utilized in the future when greater than average use of fixed costs occurs. |

Unutilized capacity under the practical capacity concept is simply a matter of measuring the unused productive ability of a plant. Unutilized capacity under the normal and cycle overhead concepts is measured in the same way, that is as the difference between capacity utilized and average sales expectations. However the meaning of unutilized capacity is considerably different in each case. Unutilized capacity is considered a loss under the normal overhead concept while it is considered a deferred charge under the cycle overhead concept.

Under normal and cycle capacity, actual output can be greater than average sales expectations. Thus the previous illustration would have to be changed as follows:


Overutilized capacity would represent a special gain due to greater-than-average use of fixed costs under normal capacity, and a deferred credit due to greater-than-average useof fixed costs under cycle capacity. The deferred charges and deferred credits associated with the cycle capacity concept are treated as offsetting items. Overutilized capacity cannot ordinarily exist under the practical capacity concept, since practical capacity is defined as physical output potential which cannot be exceeded.[2]

Two other capacity measures are sometimes spoken of in accounting literature. They are maximum theoretical capacity and expected output for the year. Maximum theoretical capacity is generally repudiated since it does not recognize human frailties, i.e., the occurrence of operating interruptions. Expected output for the year is generally repudiated as a basis for allocating fixed overhead costs to product since it yields a unit cost which will vary with the volume of production activity.

Each of the capacity measures introduced is ordinarily identified by the names and descriptions given above.[3] However,

---

[2] Actual output could exceed practical capacity where the estimate of operating interruptions is in error or when plant and equipment are used for more hours than expected or when the productivity of plant, equipment, and facilities is above expectations.

[3] Adolph Matz, Othel J. Curry, and George W. Frank, *op. cit.*, pp. 532–4.

Charles F. Schlatter and William J. Schlatter, *op. cit.*, p. 435.

John J. Blocker and W. Keith Weltmer, *Cost Accounting*, 3rd. ed. (New York: McGraw-Hill Book Company, 1954), p. 313.

"normal capacity" is often considered as including some of or all the capacity concepts mentioned here.[4] In one significant study, normal and cycle capacity as defined in this paper are considered as two aspects of "average activity."[5]

The above illustrations of capacity concepts (practical capacity, normal capacity, and cycle capacity) and the treatment of overhead costs show how overhead costs are divided and allocated for income measurement purposes. Fixed overhead costs are assumed to be one lump sum which is cut into slices of equal cost for allocation to individual units of output. Each unit of output then has an equal fixed cost allocation.[6] Thus, unit costs are not allowed to fluctuate with volume, that is, the fixed costs of a period are not allowed to be allocated to the actual output of the same period[7] which would yield a varying fixed cost per unit based solely on changes in production volume. The possibility of unit costs fluctuating with volume is eliminated by means of the special treatment of unutilized and overutilized fixed overhead costs.

Thus far, the assumptions concerning the fixed-variable cost breakdown and constancy of fixed overhead costs per unit have been illustrated. Both assumptions are inherent in the three generally recognized measures of capacity. However, objection isnecessary to both of these assumptions. A fixed-variable cost breakdown is not best for income measurement and unit costs should be allowed to vary with volume, under the conditions to be spelled out in succeeding pages.

### *Overhead Cost Segregation for Income Measurement*

For income measurement purposes, overhead costs should not be segregated into the familiar fixed-variable dichotomy. A threefold categorization of manufacturing overhead would be best to illustrate the recommended approach to income measurement. The segregation is as follows:

1) Acquisiton costs of long-lived assets (fixed assets).
2) Semi-variable cost inputs related to salaries of supervisory personnel, practically all the costs of service departments, and practically all the expenses incurred by the plant superintendent's office and the manufacturing vice-president's office.
3) All other overhead costs; these are primarily the costs of operating equipment and facilities.

At first there may not seem to be a great distinction between the twofold and the threefold categorizations of overhead costs. Categories (1) and (2) of the new threefold grouping can almost be described as a breakdown of the old fixed cost category, while category (3) can almost be described as the old variable cost category. However, category (2), semi-variable inputs, consists of cost elements which are separated into fixed and variable components for purposes of refining the usual fixed-variable cost breakdown. In addition to the threefold cost categorization recommended, there is another very important difference (perhaps the most important) in the approach to income measurment to be recommended. Each of the three cost groups is to be allocated to production in a different manner. The acquisition costs of long-lived assets are to be allocated to production on a unit-of-production basis. In other words, depreciation *is not* to be calculated on a straight-line basis; depreciation *is* to be calculated on a unit-of-production basis. Under straight-line depreciation the useful life of fixed assets is

---

[4] N.A.C.A. Research Study, "Practice in Applying Overhead and Calculating Normal Capacity," *N.A.C.A. Bulletin*, XIX, Brummet, *op. cit.*, p. 72.

[5] Brummet, *op. cit.*, p. 62.

[6] Each unit of output also has an equal variable cost allocation.

[7] One exception to this is under expected annual output as a measure of capacity wherein all fixed costs are allocated to actual output.

calculated in terms of years. Under the unit of production method the useful life of fixed assets is calculated on the basis of expected output during the time the fixed asset is expected to be used.[8] Fixed assets are purchased in order to produce units of product. Thus it seems quite reasonable to allocate fixed asset costs on the basis of units of product expected to be produced during the lifetime of the fixed asset.

Semi-variable cost inputs are to be allocated to actual output produced. Semi-variable cost inputs are costs that come in chunks. It is absolutely necessary to incur these "chunks" in order to obtain any output within the range of output serviced by the semi-variable cost inputs. These "chunks" are added when production reaches a certain level, and they are absolutely necessary to all output possibilities starting where the "chunk" is first added and ending at the point where it is necessary to add another "chunk." The salaries of all classes of supervisory personnel are good examples of semi-variable cost inputs or "chunk costs." Since these semi-variable cost inputs are absolutely necessary for production, they must all be considered costs of production no matter what output is within the range for which they are absolutely necessary.

On the basis of these semi-variable cost inputs, unit costs can and must vary with volume. For example, if the addition of one more supervisor yields the possibility of adequately supervising a range of outputs from the present output limit (in terms of adequate supervision) of 200,000 units to an output limit of 240,000 units, all the costs associated with the supervisor are costs of whatever output is produced within the 200,000–240,000 output range for which the supervisor is absolutely necessary. The supervisor must be acquired in his entirety for he is an indivisible cost input. The supervisor is as necessary for the first unit as he is for the 40,000th unit. If the added supervisor's salary is $8,000, the added supervisory costs per unit of output would have a range from $8,000 per unit for the first unit above 200,000 to $.20 per unit for the 40,000th unit above 200,000. The fluctuation in the added supervisory costs per unit within the 200,000–240,000 output range would certainly yield a total unit cost that would vary with volume.

If costs are absolutely necessary for production, they cannot be considered other than true costs of production and thus allocable to units produced. A system of accounting which will not allow unit costs figures to fluctuate on the basis of production volume and indivisible cost inputs is inaccurate. Such an accounting system takes the indefensible position of describing an absolutely necessary cost element as "waste" (an idle capacity loss).

Describing an absolutely necessary cost element as "waste" is a natural concomitant of those cost systems which will not allow unit costs to fluctuate with production volume. If the unit cost is stabilized at the top of the "chunk cost" output range (practical capacity), the cost per unit would be stabilized at its lowest possible level. If production is at any point in the output range below the top point, the justifiable increase in unit costs would not be allowed. The unit cost increase would be removed from production costs and classified as "waste" due to unutilized facilities in a strict physical sense (practical capacity).

If the unit cost is stabilized at an average of expected output within the "chunk cost" range (normal and cycle capacity), the cost per unit would be stabilized at an average unit cost level. If production is at any point above the average, the justifiable

[8] The calculability of unit-of-production depreciation will be considered in succeeding pages under "Some Objections Considered."

decrease in unit costs would not be allowed. The cost decrease would be removed from production costs and considered as a special gain under normal capacity and a deferred credit under cycle capacity. If production is at any point below the average, a justifiable unit cost increase would not be allowed. The cost increase would be removed from production costs and considered as a loss under normal capacity and a deferred charge under cycle capacity.

Thus, under any of the three capacity concepts an absolutely necessary cost of production could be considered as a loss due to unutilized capacity or as a deferred charge. Under normal and cycle capacity, when output is above average, unit costs would be stabilized at an inflated level. The inflated unit costs would be offset by the bookkeeping manipulation of a special gain or a deferred credit due to greater than average use of "chunk costs." It seems hardly necessary to restate that unit costs should be allowed to fluctuate on the basis of whatever output is achieved within the range for which "chunk costs" are absolutely necessary. None of the capacity concepts considers this possibility, and therefore all three concepts are in error. What are absolutely necessary costs of production cannot sensibly be considered otherwise.

The third category of overhead costs is essentially variable in nature. These costs are incurred only if there is production, and thus they should be allocated to units produced.

In the case of all three cost categories, costs are allocated to actual production, for it is actual production which gives rise to these costs. Note that the actual production basis is usable for depreciation because depreciation is recognized on a unit-of-production basis. Actual production is usable for semi-variable cost inputs because the semi-variable cost inputs are absolutely necessary to produce actual output. Actual production is usable for the third cost category because of the variable nature of these costs.

The fact that it seems quite reasonable to allocate fixed asset costs on a unit-of-output basis plus the fact that both "chunk costs" and variable costs are absolutely necessary cost inputs gives rise to two conclusions, viz.

1) The threefold categorization of manufacturing overhead provides an excellent approach to the measure of income as it relates to overhead costs, and
2) Unit costs should be allowed to vary with volume within the confines of the chunk cost range of output.

These conclusions automatically repudiate the two basic assumptions inherent in the present-day treatment of manufacturing overhead as it relates to income measurement which are that a fixed-variable cost segregation is best for income measurement purposes and that unit costs should not be allowed to vary with volume.

### *Some Objections Considered*

It would seem that there are three possible objections to the method of accounting for overhead costs recommended in the preceding pages. Objection one relates to the practicality of calculating depreciation on a unit-of-output basis. Objection two relates to the possibility of subjecting certain "chunk costs" (particularly supervisory salaries) to a unit-of-production cost amortization plan. Objection three relates to the direct costing ideology.

For those who claim that they use a normal capacity concept for allocating fixed overhead, there should be no problem in calculating unit-of-production depreciation. The normal capacity concept yields an excellent approximation to unit-of-production depreciation if under-and-over-

absorbed straight-line depreciation are treated as adjustments of the allowance for depreciation or as deferred balance sheet items.

The normal overhead concept has been applied in actual practice.[9] In fact, one study (1948) by the National Association of Cost Accountants shows without doubt that the normal overhead concept was predominant in seventy-two industrial concerns. This predominance was revealed in the following quotation from the published report.

"The standard overhead rate is usually based upon a volume of production which is intended to provide for recovery of overhead costs over a period of years Used for costing production it avoids the disturbing effect of fluctuations in production volume which tend to increase unit costs in periods of low activity and to decrease unit costs in periods of high activity.[10]

There is no suggestion here that one should revert to a normal capacity concept. All that is suggested is that the average sales expectations of normal capacity can yield an approximation to unit-of-output depreciation if under-and-overabsorbed depreciation are treated as adjustments of the depreciation allowances or perhaps as deferred balance sheet items (in effect the cycle capacity concept).

The only costs that would be subject to the revised normal or cycle concept would be depreciation costs and possibly the taxes and insurance on depreciable property. The taxes and insurance on depreciable property are a part of the cost of utilizing equipment. In addition taxes and insurance are automatically incurred because of a fixed asset expenditure decision and thus it seems quite logical they should be amortized over the useful life of the fixed asset acquisitions.

The following illustration should show the similarity of the revised normal capacity concept (in effect the cycle capacity concept) and the unit of production method of amortization. A single asset and depreciation costs will be used as the basis of the illustration.

*Unit-of-Production Depreciation on a Single Asset*

| | |
|---|---|
| Cost (less salvage) | $3,000 |
| Expected output during five-year expected life | 150,000 Units |
| Depreciation cost per unit | $.02 |

| *Years* | *Output* | *Depreciation Charged to Product* |
|---|---|---|
| 1 | 20,000 | $ 400 |
| 2 | 25,000 | 500 |
| 3 | 30,000 | 600 |
| 4 | 35,000 | 700 |
| 5 | 40,000 | 800 |
| | 150,000 | $3,000 |

*Cycle Capacity Applied to Depreciation Costs on a Single Asset*

| | |
|---|---|
| Cost (less salvage) | $3,000 |
| Useful life | 5 years |
| Depreciation per year | $ 600 |
| Expected output during useful life | 150,000 units |
| Average expected output per year (150,000÷5) | 30,000 units |

| *Years* | *Actual Output* | *Ratio of Actual Output to Average Output* | *Depreciation per Year* | *Depreciation Charged to Product* | *Depreciation (under) or Over-absorbed* |
|---|---|---|---|---|---|
| 1 | 20,000 | 20/30 | $ 600 | $ 400 | ($200) |
| 2 | 25,000 | 25/30 | 600 | 500 | ( 100) |
| 3 | 30,000 | 30/30 | 600 | 600 | —0— |
| 4 | 35,000 | 35/30 | 600 | 700 | 100 |
| 5 | 40,000 | 40/30 | 600 | 800 | 200 |
| | 150,000 | | $3,000 | $3,000 | —0— |

As shown in the above illustrations, the amount of depreciation charged to production is the same in each year under the unit-of-production and the cycle capacity methods. An extension of the argument presented here from one fixed asset and

---

[9] N.A.C.A. Research Study, "Practice in Applying Overhead and Calculating Normal Capacity" *op. cit.*, p. 930.

N.A.C.A. Research Study, "Accounting for Excess Labor Costs and Overhead Under Conditions of Increased Production," *N.A.C.A. Bulletin*, XXII, Sec. 3 (August 15, 1941), pp. 1565–70.

[10] *How Standard Costs Are Being Used Currently*, (New York: National Association of Cost Accountants, 1950), p. 60.

depreciation costs to all fixed assets and insurance and taxes as well as depreciation is not difficult. All that is necessary is recognition of the fact that for purposes of expediency the cycle concept could not be applied to individual assets. The useful lives and expected actual outputs of individual fixed assets would have to be averaged for groups of fixed assets or for all fixed assets as a whole. This is not much different than what is done for all group or composite methods of depreciation used in financial accounting. In addition to the averaging, estimates of real property taxes and insurance on real property would have to be made.

Today in many business enterprises manufacturing facilities are leased rather than purchased. Thus a question arises concerning the allocation of lease rentals to output. Since the lease is only another way of acquiring the service utility of property, there should be no new problem here. A lease involves the acquisition of property with someone else's money rather than with the purchaser's money. The periodic payments on a lease can be regarded as regular installments paid for the total useful service potential of the property during the life of the lease. Thus the total lease payments can be added and divided by useful life in terms of units of output in order to yield a unit-of-production method of cost allocation for the lease costs. The unit-of-production method is defensible in the case of a lease, since a lease still represents the acquisition of the expected output use of an asset during the life of the lease. Of course, as an approximation to the unit-of-production amortization plan, the individual lease payments can be subjected to the cycle capacity concept in the same manner as straight-line depreciation.

An extension of the unit-of-output amortization plan (equivalent to the cycle capacity concept) for lease rentals can possibly be made to supervisory salaries. Under an argument which states that supervisory salaries should be made subject to a unit-of-output amortization plan there is one implicit assumption, viz., salary payments are not given for services in the year or month paid, they are only periodic payments given as an installment on the total useful service potential of the supervisor. Such an assumption was accepted above for leasehold rentals, but it is difficult to use the same assumption for supervisory salaries or for any of the items identified as semi-variable cost inputs ("chunk costs"). Supervisors and other semi-variable cost inputs are paid for whatever usefulness they can render within the volume range for which they are necessary. Thus it is necessary to classify supervisory costs as semi-variable cost inputs and to accept the overhead cost categories presented in this paper.

If one were to accept the direct costing idea that only variable costs are to be considered costs of production, the ideas presented in this paper would certainly not be acceptable.[11] However, the advocates of direct costing who use economic marginalism and break-even analysis as the foundation of their arguments should remember that neither marginalism nor break-even analysis is a form of income measurement. Marginalism is a technique designed to concentrate on the strategic factors involved in the short-run price and output decisions of a firm. Break-even analysis is essentially a process which focuses attention on the strategic factors involved in short-run decision-making. Both marginalism and break-even analysis are short-run decision-making processes related to in-

[11] In one sense the ideas presented in this paper would be acceptable to direct costing enthusiasts. The conversion of fixed costs related to fixed assets into variable costs via a unit-of-output amortization plan would yield a sympathetic relationship between net income and sales, a goal of direct costing. However, there still remain varying unit costs due to indivisible cost inputs which would have a tendency to offset this greater sympathy between sales and net income.

come maximization, a far cry from income measurement which is a long-run concept. The lack of consideration given to fixed costs by marginalism and break-even analysis does not mean that fixed costs are ***not costs*** of production, it only means that fixed costs are ***not relevant*** to short-run decision-making.

The three possible objections to the accounting for overhead costs recommended in this paper are not valid. A unit-of-production method of depreciation is not easy to quantify. All that is recommended is that practitioners either make the attempt to quantify the unit-of-production method or use an approximation thereto. The approximation would be the revised normal or cycle overhead concept applied to depreciation and to insurance and taxes on depreciable property also. The normal overhead concept has been used in practice and thus an approximation to the unit-of-production method for depreciation is calculable on a practical basis. Supervisory costs as well as other "chunk costs" cannot logically be considered a form of lease rental so they must be considered as costs of producing whatever output is produced within the relevant volume range. Direct costing cannot be accepted for income measurement purposes since it is directly opposed to the long-run implications of income measurement.

## *Summary*

Income can be measured properly only when every attempt is made to segregate and allocate overhead costs to units of output so that costs of products may be matched or associated with the revenues derived from the sale of merchandise. To accomplish this task the generally accepted fixed-variable cost breakdown should be discarded for income measurement purposes. The straight-line amortization of costs associated with fixed assets should also be discarded. In place of straight-line amortization, a unit-of-output amortization plan or an approximation thereto should be used. The approximation would be the cycle overhead concept. The fixed cost portion of semi-variable cost inputs should be reassociated with their variable counterparts and then allocated to the output for which they were absolutely necessary elements of production. Finally, unit costs should be allowed to fluctuate with volume within the range for which semi-variable cost inputs are absolutely necessary costs of production.

# DEPRECIATION VS. INFLATION

Harold G. Avery
*Professor, Union College*

The purpose of this paper is to point out briefly one aspect of the theoretical relationship between total depreciation allowances and the fixed property accounts. It is assumed that the assets are carried on the books at historical cost and at the end of their life cycle are to be replaced by similar assets having a much higher cost figure because of a sustained period of rising prices. Depreciation is considered here as a cost allocation and the allowance or reserve account as a measurement of the total asset costs which have been charged to operations during the past. No other financial connection between the replacement of an individual asset and its related allowance account is implied; in other words, this paper does not purport to advocate the funding of an allowance account. Depreciation is recognized as a non-cash expense and therefore becomes a part of the current funds to be used as the management sees fit. However, it is logical to presume that since depreciation is an allocation of fixed asset cost once the cost of the asset has been recovered, the funds should play a part in helping to finance the replacement of any capital item if the firm is to remain a going concern. No consideration is given to the fact that the replacements may be improvements in structure and efficiency as compared with the original assets. This discussion will emphasize only the monetary point of view.

According to George O. May, as expressed in his book *Financial Accounting—A Distillation of Experience*, one of the best established rules in accounting is that fixed assets shall not be carried on the books at more than cost.[1] This statement was written in 1946. Since that time the original or historical cost formula has been attacked on the ground that it is inconsistent with economic or competitive cost because it makes no adjustment for the changes in the value of money. The rule is based on the assumption of a stable monetary system. Moreover, it is alleged to be inflexible because it does not recognize the changing facts of economic life. Those who object to the rule contend that economic cost should be substituted for historical cost in the accounting records, thus attempting to resolve the problem with economic rather than accounting concepts. It is the responsibility of the accountant to cope with the problem and to arrive at a solution in the most conservative manner possible by using financial and bookkeeping data based upon actual rather than theoretical monetary values.

### *Stable Monetary System*

Let us examine the question of a stable monetary system. In the first place, it is doubtful if economic society during the development of the art of accountancy over the past five hundred years has ever experienced a monetary system in which the standard unit of money has retained a stable value for any great length of time. Monarchs in the past have found the cheapening of money a simple means of paying off burdensome long-term obligations. In recent years Germany, China, and Hungary have witnessed the complete repudiation of the value of their currencies. France, on the other hand, has undergone an inflationary price trend since 1913 without the formal repudiation of the franc, although today (after 46 years) its value

[1] Page 39.

represents about 1/80th of its pre-World War I purchasing power. Furthermore, the United States has sustained a continuing decrease in the value of the dollar during the past two decades. The dollar has suffered a 50 per cent decline in its purchasing power (the general level of prices having doubled or increased 100 per cent) since 1939. During the past decade (1949–1959) the value of the dollar has decreased approximately 20 per cent, as the general level of prices has increased roughly 25 per cent during that period. Although the upward trend may be halted in the near future, one of our leading monetary experts has stated that "the threat of long-term inflation remains both real and ominous."[2]

What has been the effect of this inflationary period on the original cost concept? The following two tables have been constructed to measure the relationship between the general increase in prices and the depreciation allowances or reserves provided for the allocation of original cost of the fixed assets of the firm.

### *Annual Rate of Price Increases*

Table I illustrates a method of estimating the annual rate of increase in prices (on a compound interest basis) when the price increase can be measured by the use of index numbers. For example, the Consumer Price Index of the U. S. Bureau of Labor Statistics stood at 125.5 for December 1959, based on 1947–1949 average prices of 100. Let us say, then, that consumer prices in general have increased approximately 25 per cent in the last 10 years. This particular increase in prices is represented in Table I by Column A. By interpolating ten years in this column one observes that the rate of increase in prices on a compound interest basis has been between 2 and 2½ per cent, or about 2¼ per cent. Prices have doubled (100 per cent increase), say, since 1939, or in 20 years. It can be determined from Column C that the rate of increase in the general price level has been 3½ per cent. Since this is just about the general situation during the past two decades, one can conclude that the rate of price increase (or inflationary trend) has leveled off somewhat in the past ten years as compared with the over-all increase since 1939. For illustrative purposes, assume that during the period from 1946 to the middle of 1954, or 8½ years, the price index rose 50 per cent. Column B would indicate that the rate of increase was 5 per cent during this period.

Table I can be expanded to show any amount of percentage increase in a price index, but the percentage increase on a compound interest basis is here confined to the limitation of the published tables, although mathematically any rate of interest can be calculated.

TABLE I[3]

ESTIMATE OF ANNUAL INCREASE IN PRICES ON A COMPOUND INTEREST BASIS

| *Rate of Increase Compound Interest (Per Cent)* | *No. of Years Elapsed (Approximate)* | | |
|---|---|---|---|
| | *Col. A With Prices Increasing 25%* | *Col. B With Prices Increasing 50%* | *Col. C With Prices Increasing 100%* |
| 2 | 11½ | 20½ | 35 |
| 2½ | 9 | 16½ | 28 |
| 3 | 7½ | 13½ | 23 |
| 3½ | 6½ | 12 | 20 |
| 4 | 6 | 10½ | 18 |
| 5 | 4½ | 8½ | 15 |

### *Theoretical Earnings*

Table II shows the approximate number of years and half-years required for depreciation allowances or reserves calculated at varying rates of depreciation and accumulated at certain earnings-investment ratios to equal the original cost of the asset. It indicates how the earnings on the sums which measure the depreciation allowances, together with the annual amounts

[2] Allan Sproul, "The Sickness of Inflation," *Fortune*, July 1959, p. 118.

TABLE II[3]

NUMBER OF YEARS REQUIRED TO ACCUMULATE TOTAL DEPRECIATION ALLOWANCES ON AN EARNINGS-INVESTMENT RATIO BASIS

(BASED ON ORIGINAL COST)

| *Earnings-Investment Ratio (Amount of Annuity Compounded Annually)* | *No. of Years Required (Approximate)* | | |
|---|---|---|---|
| | *Col. A (At 20% Dep'n Rate)* | *Col. B (At 10% Dep'n Rate)* | *Col. C (At 5% Dep'n Rate)* |
| 2 | 4½ | 9½ | 17 |
| 2½ | 4½ | 9 | 16½ |
| 3 | 4½ | 9 | 16 |
| 3½ | 4½ | 9 | 15½ |
| 4 | 4½ | 8½ | 15 |
| 5 | 4½ | 8½ | 14½ |
| 6 | 4½ | 8½ | 13½ |
| 7 | 4½ | 8 | 13 |
| 8 | 4½ | 8 | 12½ |

credited each year for the allowances, can keep pace with a relatively slight inflationary trend. Table II is explained briefly as follows.

Assets can be depreciated on any number of bases, but in the illustration above the straight-line method is used on a 5, 10, or 20-year basis, that is, 20, 10, or 5 per cent per year on the original cost less salvage value. On a 20-year life basis (Column C), five per cent of the historical cost (assuming salvage value is zero) is charged to depreciation expense and the allowance credited for that amount each year. As this allowance accumulates over a period of time and the asset becomes fully depreciated, the theory is that this sum measures the amount of the fixed asset cost allocated to expense. In the meantime, if prices have increased, the book allowance certainly does not prove sufficient to measure the amount of funds needed to replace the asset in question.

On the other hand, the sums retained in the business as measured by the credit amounts contained in the depreciation allowance accounts actually become a part of the current capital invested in the firm's operations until funds are needed for replacements. These amounts should be recognized as making a contribution to the annual earnings of the firm and receive credit therefor on a theoretical basis. This is the theory advanced by the proponents of the annuity method of depreciation, although they suggest that the theoretical interest earned shall be included as a part of the depreciation charge with the offsetting interest credit being carried on the books. The total depreciation charges (including interest) thus will amortize the cost of the fixed asset over its estimated life. In our case, however, the depreciation charge does not include the interest earned. The interest is assumed to be earned on a theoretical basis, and thus the amount needed to replace the original cost of the asset will accumulate over a period less than that used to figure the depreciation rate.

For example, suppose the asset cost $10,000 and is depreciated on an annual straight-line basis over a period of 20 years, or at a 5 per cent rate, with no salvage value. If the earnings-investment ratio of the firm were five per cent, the sum of $10,000 would accumulate in 14½ years as indicated in Column C of Table II. The depreciation charge would be $500 per year. If $500 were invested each year on an earnings basis of 5 per cent, compounded annually, it would actually amount to $9,800 in 14 years, or $10,789 in 15 years, according to compound interest tables.

Column B of Table II shows the number of years on a 10 per cent depreciation base per year. If an asset cost $1,000, then $100 would be charged to depreciation expense (assuming no salvage value). The $1,000 would be accumulated on a theoretical earnings-investment ratio of 7 per cent in a period of eight years. The figure actually

[3] The compound interest data in both Tables I and II were obtained from Glover, James W., *Tables of Applied Mathematics in Finance, Insurance, Statistics*, (1930). Approximate years were estimated by the writer.

would be \$1,026. Column A in Table II shows that it will take 4½ years approximately to accumulate a sum equal to the historical cost of an asset, whether the earnings-investment ratio of the firm is 2 or 8 per cent. If an asset cost \$5,000 and were depreciated at the rate of \$1,000 per year, the accumulated theoretical sum at 2 per cent would be \$4,122 in four years, or \$5,204 in five years; likewise on an 8 per cent basis, the figures would be \$4,506 and \$5,867 respectively. Compound interest accumulations on an annuity basis do not have much significance until after a number of annual payments have been made. More precise calculations can be made to express the time periods of accumulation, but in this study only approximate years and half-years were thought necessary.

It has been shown that prices have increased at a 3½ per cent rate over the past 20 years, but at a slower rate of 2¼ per cent during the past 10 years. If a firm has been able to maintain an earnings-investment ratio of, say, 8 per cent during the past 10 years, assets purchased in 1949 and depreciated on an original cost basis over a 10-year period could have been replaced at the end of 8 years at the original amount. If the asset cost \$10,000, the eight accumulations of \$1,000 each would theoretically amount to \$10,637 at the end of the eighth year at 8 per cent compounded annually.

*Replacement Decision*

The decision when to replace the asset is one for management to make. Obsolescence may have taken place as a result of technological improvements, and the asset should be retired even before the eight-year period, or even at the end of five years. The asset, on the other hand, may be performing its task well and need not be replaced for several years after it becomes fully depreciated on the books. In the former case the depreciation charge has been understated and in the latter overstated. Depreciation, whatever method may be applied, is nothing more than an estimate. Today, however, it is recommended as a conservative policy to write off the asset as quickly as possible because technological advances are being made at such a rapid rate that obsolescence is regarded as a more important factor than the physical character of the property.

*Conclusion*

This paper has attempted to show that as long as the inflationary trend has been relatively slight, depreciation allowances under ordinary circumstances are large enough to provide for the necessary replacements if theoretical interest is assumed to accumulate on these allowances at the earnings-investment ratio of the firm. This conclusion is not meant to say that inflation is a good thing. A stabilized monetary system is one of the primary assumptions of the accountant; any other system causes inequities to develop between the financial relationships of debtor and creditor. The conclusion does mean that inflation has not been sufficiently significant to warrant the modification of the historical cost rule in the evaluation of fixed property accounts. Technological improvements and rates of earnings have kept pace during the past twenty years with the trend in price increases, since the price trend has increased at a moderately low rate on a compound interest basis. However, it is too much to expect that these earnings and scientific improvements will continue indefinitely. If inflation becomes continuous and built in as part of our economy, or its rate accelerates (a condition which has taken place in other countries in recent years), then accounting methods and techniques will have to be developed in order to measure the difference between real and inflated profits.

# "MORE" ON "INCOME-TAX-ALLOCATION" ACCOUNTING

ARNOLD W. JOHNSON
*Professor, New York University*

THE allocation of income taxes on financial statements is a relatively new development in corporate accounting. It is an extraordinarily important development because of its significant effect upon the determination of corporate net income and because, also, it seems to represent somewhat of an erosion of certain of our long-tested and long-standing definitions and concepts as to principles of accounting. The matter of income-tax-allocation-accounting has arisen because, for corporate *income-tax purposes*, certain amortizable costs have been deducted from revenues by using a rate or rates which, generally, have exceeded the rate or rates used for the determination of these deductions in corporate statements of income, the differences between the comparable deductions being material. This has been especially true with respect to companies operating under the liberal income tax depreciation-expense deductions provided by certificates of necessity. In this connection income-tax-allocation accounting won some favor on the theory that a current provision should be made for income taxes which were expected to be payable in future years when depreciation deductions for income-tax purposes would be less than depreciation deductions for accounting purposes.

In July 1958, the AICPA Committee on Accounting Procedures stated that, in circumstances in which an accelerated rate of depreciation is used for the determination of income subject to income taxes and another rate (generally lower) is used for financial accounting purposes, it is appropriate to give accounting recognition to the amount of income taxes deferred to future accounting periods. In this statement it was presumed that, over the long run, the total of provisions for depreciation expense in statements of income will equal the total of provisions for depreciation expense on a company's income-tax returns.[1]

By way of reinforcing this method of giving accounting recognition to deferred income taxes, the Committee made the following comments:

*Discussion*

6. Following the passage of the Internal Revenue Act of 1954 in August of that year, permitting the use of declining-balance and similar accelerated deprecia-

[1] "4. There may be situations in which the declining-balance method is adopted for income-tax purposes but other appropriate methods are used for financial accounting purposes. In such cases, accounting recognition should be given to deferred income taxes if the amounts thereof are material, except in those rare cases, such as are mentioned in paragraph 8, where there are special circumstances which may make such procedure inappropriate. The foregoing provision as to accounting recognition of deferred income taxes applies to a single asset, or to a group of assets which are expected to be retired from service at about the same time; in this case an excess of depreciation taken for income-tax purposes during the earlier years would be followed by the opposite condition in later years, and there would be a tax deferment for a definite period. It applies also to a group of assets consisting of numerous units which may be of differing lengths of life and which are expected to be continually replaced; in this case an excess of depreciation taken for income-tax purposes during the earlier years would be followed in later years by substantial equality between the annual depreciation for income-tax purposes and that for accounting purposes, and a tax deferment would be built up during the earlier years which would tend to remain relatively constant thereafter. It applies further to a gradually expanding plant; in this case an excess of depreciation taken for income-tax purposes may exist each year during the period of expansion in which event there would be a tax deferment which might increase as long as the period of expansion continued.

5. Where it may reasonably be presumed that the accumulative difference between taxable income and financial income will continue for a long or indefinite period, it is alternatively appropriate, instead of crediting a deferred tax amount, to recognize the related tax effect as additional amortization or depreciation applicable to such assets in recognition of the loss of future deductibility for income-tax purposes." Accounting Research Bulletin, No. 44 (Revised).

tion methods for federal income-tax purposes, the committee anticipated that many companies would be considering whether such methods should be adopted for general accounting purposes. In October of that year, Accounting Research Bulletin No. 44 was issued in which the committee stated that such accelerated methods met the requirement of being "systematic and rational." The committee also stated that when such methods were adopted for general accounting purposes, appropriate disclosure of the change should be made whenever depreciation was a significant factor in the determination of net income.

7. Since the issuance of Accounting Research Bulletin No. 44, the committee has been observing and studying cases involving the application of the bulletin. Studies of published reports and other source material have indicated that, where material amounts are involved, recognition of deferred income taxes in the general accounts is needed to obtain an equitable matching of costs and revenues and to avoid income distortion, even in those cases in which the payment of taxes is deferred for a relatively long period. This conclusion is borne out by the committee's studies which indicate that where accelerated depreciation methods are used for income-tax purposes only, most companies do give recognition to the resultant deferment of income taxes, or alternatively, recognize the loss of future deductibility for income-tax purposes of the cost of fixed assets by an appropriate credit to an accumulated amortization or depreciation account applicable to such assets.

### *Credits in the Balance Sheet Resulting from Income-Tax-Allocation Accounting Procedures*

As a general rule, accounting procedures for the allocation of income taxes have resulted in the placement of certain credit values for "deferred income taxes" in the balance sheet. The accounts representing these credit values have been called "deferred credits." Since these accounts are not part of corporate net worth they must be liabilities. Do these accounts represent liabilities for the payment of certain income taxes, future payable? It is absolutely certain, that a *liability* for deferred-income-taxes does *not* exist as of the date of a current balance sheet. It is absolutely certain, further, that currently there is no income-tax *creditor*. There is no claim by the United States Treasury. And the corporate taxpayer does not consider the credit values in question to be liabilities. By the test of common sense, the company *knows* the values are not liabilities.

One of the fundamental precepts of accounting is that *anything of economic value is matched by financial claims against these values.* More formally, an accountant would say that: "assets are matched by an equal amount of financial claims against them." These claims, held by legal persons, are of two kinds only: (1) liabilities and (2) the claims of the proprietary interest (or interests) of a business, i.e., "net worth" claims. A liability is a *legal obligation* to pay a fixed or determinable amount of money, or alternatively, to deliver a consideration of equal value.

A credit for deferred income taxes must be either a liability or a net worth value. *One* of these classifications must be selected by those who would place a credit for deferred-income-taxes payable in the balance sheet. Both of these classifications, however, run counter to the fact that the value is not a liability and the fact, also, that the value is not a proprietary item. Even the S.E.C. has stated that the deferred-income-tax-payable must not be classified as a proprietary item, otherwise investors will be misled.[2] The S.E.C. might well have stated, also, that investors will likely be misled if the liabilities of a business are overstated by classifying deferred-income-taxes-payable as a liability.

Parenthetically, it may be observed that if deferred income taxes payable is a liability account then our time-tested accounting definitions of a liability will have to be changed.[3]

If deferred income taxes payable is not a liability, then shall the famous equation of

[2] Accounting Series Release No. 85, February 29, 1960.

[3] "Liabilities are . . . the debts owed by a business." Johnson, Arnold W., *Elementary Accounting*, 1956, p. 12.

"Liabilities are the rights or claims of the creditors, expressed in dollars and cents." Paton, William A., *Essentials of Accounting*, 1949, p. 19.

A liability is "an amount owing by one person (a debtor) to another (a creditor), payable in money, goods or services: the consequence of an asset or service received or a loss incurred; particularly any debt (a) due or past due, (b) due at a specified time in the future, or (c) due only on failure to perform a future act." Kohler, Eric L., *A Dictionary for Accountants*, 1957, p. 291.

Assets − Liabilities = Net Worth

be changed to read

Assets − Liabilities − Deferred Credits = Net Worth?

*Debits in the Balance Sheet Resulting from the Allocation of Income Taxes*

If, because the total of charges in a company's income-tax return (for a given year) is greater than the total of charges in the company's statement of income (and the difference is a significant value), it is proper to record Deferred Income Taxes Payable, it would then be appropriate, presumably, by the philosophy of income-tax-allocation-accounting procedures to record Prepaid Income Taxes in those cases where the total of charges in a company's statement of income exceed the total of charges in the company's income-tax return (and the difference is a significant value). Few accountants or businessmen would be willing to admit that the debit amount is an account receivable or, indeed, that it is even an asset.[4] How could it be an asset? One shudders at the prospect of increasing the net income of a company for a given fiscal year with an "unrealized" value related to "prepaid income taxes" arising from the procedures of income-tax-allocation accounting.

One writer, however, has stated that, from the accounting standpoint, "deferred charges to income tax expense" represent "an advance payment, a payment of an expense related to net income that will be reported on the income statements of future periods. As such it would seem to qualify as a legitimate asset."[5] Accountants and businessmen have generally long agreed that a prepaid expense means that an expense has been paid in advance of the consumption of value and that, as a cost of future income, the prepayment will be a financial benefit to one or more future accounting periods. "Prepaid income taxes" (arising from the procedures of income-tax-allocation accounting) are not costs to be consumed in the production of future income; and they do not represent a prepaid expense because there is no accounting "inventory" of either a commodity or of services still to be received. In the practicality and common sense of the business world, businessmen would deny that the amount, Prepaid Income Taxes, represents an asset. Their position is significantly reinforced by their knowledge that, were a specific business sold as a going concern it would not be possible to obtain one cent of sales value for the Prepaid Income Taxes account. They know, also, that entries made to record Prepaid Income Taxes (based on the procedures of income-tax-allocation) in the accounts of a business will have no effect, whatsoever, on bona fide business transactions of future accounting periods. These entries, furthermore, will have no effect upon the amount of future income taxes payable to the United States Treasury.

*Debits to Income Resulting from the Allocation of Income Taxes*

When the accounting values involved are material, debits to income representing

[4] An asset is "Something represented by a debit balance that is or would be properly carried forward upon a closing of books of account according to the rules or principles of accounting . . . on the basis that it represents either a property right or value acquired or an expenditure made which has created a property right or is properly applicable to the future." *Accounting Terminology Bulletin* No. 1. AICPA, p. 13.

"An asset is anything of value owned, an item of wealth (tangible or intangible) satisfactorily measurable in dollars and useful in carrying on a business." Johnson, Arnold W., *Elementary Accounting*, 1956, p. 11.

An asset is "any owned physical object (tangible) or right (intangible) having a money value; an item or source of wealth, expressed in terms of its cost, depreciated cost or, less frequently, some other value; hence, any cost benefiting a future period." Kohler, Eric L., *A Dictionary for Accountants*, 1957, p. 42.

"An asset may be defined as any factor, tangible or otherwise, owned by a specific enterprise and having economic significance to that enterprise." Paton, William A., *Essentials of Accounting*, 1949, p. 15.

[5] Graham, Willard J., *The Journal of Accountancy*, January 1959, p. 62.

provisions for deferred income taxes are serious because they significantly reduce the reported net income of a company for each reporting period affected. And the reporting of corporate net income, fairly and truthfully, is one of the great responsibilities of management and the accounting profession.

It is an accepted procedure of auditing that the revenues and revenue charges of a business must be supported by evidence, preferably written evidence. What is the evidence supporting the propriety of a debit to current income for income taxes, future payable? There is no billing by a creditor, no evidence of legal liability, no evidence of the erosion of the accounting value of an asset, and no evidence of the consumption of accounting value. In short, there is no factual evidence, whatsoever, to support the accounting propriety of charging current income with a provision representing "deferred income taxes."

If a company not operating under certificates of necessity uses straightline depreciation in its accounts and the sum-of-the-years-digits method in its income-tax return and the annual difference is significant, shall the income-tax benefits of the early years of fixed asset life be recorded in the accounts? If so, advocates of income-tax allocation, in the interests of consistency and logic, must also be prepared to advocate the general accounting propriety of allocating any significant current income-tax benefits arising from material differences between values deductible for accounting purposes and values deductibile for income-tax purposes, assuming these current income-tax "benefits" to have been produced by the procedures of income-tax allocation and assuming, further, that these current income tax "benefits" are expected to be offset by matching increased income-tax charges in future years.

If it is proper to "normalize" periodic income by allocating income taxes, one is tempted to ask (somewhat parenthetically) if it would then be proper, also, to allocate an unexpended advertising budget? For example, if the management of a company has established an advertising budget of $1,000,000 annually for a designated five-year period, shall an unexpended balance of $100,000 in the first year be charged to profit and loss and placed in the balance sheet as a "liability" or "deferred credit" called Deferred Advertising Expense Payable? By this bookkeeping the annual net income of the business will have been "normalized" by "normalizing" the annual debit to Advertising Expense at $1,000,000; and, concurrently, a "Deferred Liability for Advertising" will have been created in the amount of $100,000.

If it is proper to "normalize" periodic income by allocating income taxes, is it then proper to allocate income taxes for a business which, for accounting purposes, reports revenue as earned when sales are made but which for income-tax purposes reports income under the installment method of income determination, i.e., gross profit is considered to be earned proportionate to the realization of collections. Assume, for example, a simple situation in which Company XYZ, selling exclusively on an installment sales basis, reports its pre-tax income for a given year in two ways:

| | *Case 1 (for accounting purposes)* | *Case 2 (for income-tax purposes)* |
|---|---|---|
| Sales | $1,000,000 | $1,000,000 |
| Cost of Sales | 600,000 | 600,000 |
| Gross Profit | $ 400,000 | $ 400,000 |
| *Less* Unrealized Gross Profit | | 100,000 |
| Gross Profit Realized | $ 400,000 | $ 300,000 |
| Selling and General Expenses | 250,000 | 250,000 |
| Net Profit from Operations | $ 150,000 | $ 50,000 |

For the purposes of this illustration, let us assume a simple over-all corporate income-tax rate of 52%. At this rate the income tax on $150,000 is $78,000; and on $50,000 the tax is $26,000. The company, then, will report and pay a tax bill of $26,000. Accordingly, are the advocates of income-tax allocation prepared to state, in the circumstances above described, that the official and completed income statement of the company should show a total charge for income taxes of $78,000 (i.e., 52% ×$150,000), and that the balance sheet should show a current liability for income taxes, $26,000, and a noncurrent liability for future income taxes payable of $52,000 (i.e., 52%×$100,000)? If the advocates of income-tax allocation admit that these particular accounting values and procedures are proper—and they *do* follow logically from the discussion above set forth—then, indeed, the procedures of income determination for accounting purposes would seem to have been eroded and the principle of "truth in accounting" undermined.

The Securities and Exchange Commission, in Accounting Series Release No. 85. appears to support the preceding discussion. It states that "It is the Commission's view that comparable recognition of tax deferment should be made in all cases in which there is a tax reduction resulting from deducting costs for tax purposes at faster rates than for financial statement purposes." This position was supplemented by a footnote to the effect that "this is, of course, subject to the general qualification under our rules that the amounts in question are material."

What a Pandora's accounting box is opened by the procedures of income-tax-allocation accounting!

Some of the advocates of income-tax allocation have stated that income-tax allocation is a necessary part of the accounting process of matching costs and revenues, that income-tax allocation procedures are proper under the accrual method of accounting, and that they are necessary in order to avoid income distortion. Matching is obviously a proper accounting procedure when it represents the process of allocating an incurred cost over the accounting periods in which this cost is consumed in the production of revenue. A debit in the income statement for deferred income taxes is offset in the balance sheet by a credit to some account like Deferred Income Taxes Payable (estimated as probably payable in a future year or years). This credit is not a liability (for reasons earlier cited) and, if it is not a liability, the debit is not an incurred cost that can be validated as an income-debit of *any* income period. The debit, therefore, is obviously not a proper accounting charge against corporate income for a current period.

Matching is not a proper procedure when it represents the artificial reasoning that revenue must be charged with income taxes at the rate of 52% (a rate assumed for the purposes of this paragraph). Why must income be so charged? For the purpose of "normalizing" income? Is it proper for accountants to "normalize" or "smooth out" income over accounting periods in order to avoid so-called income distortion? By what logic is it ever proper for accountants to do other than report the accounting *facts* as to the revenues earned and the income-debits incurred by a business for a given fiscal period?

It has also been stated that, in the process of matching costs and revenues, the debit in the income statement for future income taxes payable is necessary in order to "let income taxes follow the income" and because "income taxes are a cost of doing business, measured by statutory taxable income." The first phrase has a measure of plausibility and slogan appeal. On close examination, however,

the phrase is without accounting merit (for reasons outlined above). The second phrase raises the question: Are income taxes a revenue cost? Income taxes payable for a given fiscal period reduce business revenues, of course; but are they costs of income comparable to cost of sales, and the costs represented by manufacturing, selling, and general expenses? These costs are incurrred in the production of revenue and, significantly, they are incurred *before* the revenue materializes.

Income taxes exist only when the revenues of a business exceed its costs for a given year and, further, they follow rather than precede the process of revenue production. Income taxes do not harmonize with the specifications of a precise definition of a revenue cost, i.e., a value which represents the necessary consumption of an accounting value for the purpose of producing periodic income. (Generally, this consumption of value is voluntary.) For the purpose of making this point more clear, assume the following condensed statements of income to be representative of the ABC Corporation for 1960.

With respect to the income statement for the year ended December 31, 1960: (1) Shall a revenue cost of $52,000 be reported for 364 days? (2) If this is a valid "cost" for 364 days, shall it be reported as invalid for 365 days? How can a cost be a genuine accounting cost for 364 days and not be included as a genuine cost in an income statement for 365 days? Income taxes *do* reduce income but whether they are true costs of earning income is a matter of theory that deserves more serious accounting study than accountants and academicians seem to have given it to date.

### *"Financial Statements Will Be More Useful"*

It has been said that the practice of allocating income taxes on the financial statements of a business makes the statements more useful. One writer, for example, has stated that:

> While the income statement does report the results of *past* operations, its utility to the reader depends primarily upon its validity as a basis for appraising the profitability of—or planning the control of—*future* operations. The failure to give proper recognition to the deferral of credits to income tax expense produces a net income amount that *is likely* to lead the reader to an overestimate of future earning power; conversely, the nonrecognition of deferred charges to income tax expense *may lead* to an underestimate of future earning power.[6]

Regardless of the probable "permanence" of

[6] Graham, Willard J., *The Journal of Accountancy*, January 1959, p. 59.

*Statement of Income*

| | *January 1–December 30, 1960* | *December 31, 1960* | *January 1–December 31, 1960* |
|---|---|---|---|
| Sales | $1,000,000 | $ 0 | $1,000,000 |
| Cost of Sales | 600,000 | 0 | 600,000 |
| Gross Profit | $ 400,000 | $ 0 | $ 400,000 |
| Selling and General Expenses | 300,000 | 0 | 300,000 |
| Net Profit from Operations | $ 100,000 | $ 0 | $ 100,000 |
| Casualty Loss (December 31, 1960) | | 100,000 | 100,000 |
| | $ 100,000 | $(100,000) | $ 0 |
| Provision for Income Taxes: | | | |
| For 364 days | 52,000 | | |
| For 1 day | | (52,000) | |
| For 365 days | | | 0 |
| Net Income | $ 48,000 | $ (48,000) | $ 0 |

this deferred credit account, the failure to defer to the proper period the credit for a current reduction in income tax payments results in an overstatement of current net income that *is likely* to lead the "outside" reader of the income statement to incorrect conclusions with respect to future earning power—or to bias the judgment of the "insider" in the formation of plans for the managerial control of future operations.[7]

In this paragraph the use of the terms "is likely" and "may lead" should be noted. Can it possibly be reasoned, logically, that these subjunctive terms should constitute the launching pad to justify the practice of income-tax allocation? If so, shall the next step be the recording of an income-tax loss carryover to the balance sheet as an asset with an offsetting credit to current income?

Financial statements, it should be remembered, are for the use of persons who are *qualified* to read them *with understanding*. This means, also, that financial information appearing on the statement of income, for example, is most effectively understood when there is an understanding of the operations of a business supplemented, if possible, by an understanding of important policy-determining directives of management bearing upon income. This includes income-tax policy.

The point that the judgment of the insiders of a company may be "biased" in the "formulation of plans for the managerial control of future operations" can be brushed aside. This point implies that the financial budget of a company might not (or would not) include provisions for disbursements estimated to be required for the payment of income taxes. A management would be naive, indeed, if its budgetary plans failed to include expected disbursements for income taxes. It is far more likely that managerial plans for the control of the future financial operations of a business *will* incorporate the company's expected annual income-tax bills.

Are financial statements *really* more useful when they incorporate the effects of income-tax-allocation accounting? This is doubtful. Intelligent readers of corporate financial statements could hardly be expected to relish the artificial "adjustment" of any of the values of these statements or the "normalization" of periodic income in order to make these financial statements allegedly more useful. Procedures like these only add to the difficulties of statement readers in their endeavors to determine: (1) what facts the financial statements really do disclose; (2) how the net income was determined; and (3) what the net income really is. If a corporation uses one rate of depreciation for accounting purposes and a higher rate for income-tax purposes, it does not overstate its net income by failing to charge income with a provision covering deferred income taxes payable in future years. Taxpayers generally, including corporate taxpayers, have the right to minimize the amount of federal income taxes payable by them by any procedures which are legally appropriate. For any given year, the charge against corporate income for income taxes should be the amount of income tax actually owed to the United States Treasury.[8] He will understand the company's provision for income taxes and its reported net income in the setting provided by his intelligent knowledge of management's income-tax policy. The financial statements of the company will be more serviceable to him

[7] *Ibid.*, p. 60.

[8] A significant illustration of the investor's *understanding* of the meaning of corporate net income is afforded by his understanding of the income statements of a company engaged in extractive operations—an oil company, for example, whose annual financial statements disclose relatively small provisions for income taxes, i.e., small in comparison with the amounts of net income reported in its annual statements of income. The investor understands that this situation is due to the fact that the company, for income-tax purposes, deducts depletion expense at the rate of 27½% whereas, in its own accounts, it deducts depletion expense by amortizing the cost of the depletive asset. Annual values by the latter procedure are generally significantly less than those used in Form 1120.

if the statements are confined to the reporting of the verified accounting *facts* of revenues and revenue debits, fairly valued. Interpretations of reported revenues and revenue debits—and forecasts for the future—should be left to those who read and use these statements.

*Disposition of the Accumulated Credit in the Deferred Income Taxes Payable Account*

When the "future" year (related to the income-tax-allocation accounting procedures of past years) becomes the "current" year covered by a corporate statement of income, consideration must then be given to the accounting disposition of the accumulated credit arising from income-tax allocation procedures by means of which accounting recognition was given in past years to the fact that depreciation deductions for income-tax purposes utilized a rate or rates in excess of those used for depreciation deductions in the financial statements. Should a part of the disbursement to pay the income-tax bill for this particular year be debited to the Deferred Income Taxes Payable account? Shall the account, alternatively, be handled as a credit, in whole or in part, to the current year's income debit for Provision for Income Taxes? And, should there be an absence of taxable income—*and this could happen*—shall the Deferred Income Taxes Payable account, in whole or in part, be transferred to current income? This question intriguingly suggests, in turn, an interesting speculative possibility: that, in "depression years," some of the bookkeeping entries underlying income-tax-allocation procedures could produce accounting values for corporate net income which would be *unrealistic* because they would be so utterly at variance with economic fact.

Based on the foregoing comments it is appropriate to repeat an earlier statement: What a Pandora's accounting box is opened by the procedures of income-tax-allocation accounting!

*Conclusion*

By independent approach and analysis, this paper supports the case against income-tax-allocation accounting succinctly summarized by Ralph S. Johns as follows:

> All items included in the income statement should be shown in accordance with generally accepted accounting principles and all have a bearing on the final net income for the period. Net income is the residuum. It is difficult to understand the thinking that one item—for example, income taxes—should be "distorted" in order to avoid "distortion" of the final net income for the period. Too much emphasis is placed upon this final figure with the result that the "tail wags the dog" and we have "normalization" of reported net income because of the accounting profession's impression of what the public thinks the final net income figure means. If the accounting profession devoted more effort to explaining what financial statements purport to represent and what they do not purport to represent (they do not purport to represent, for example: (1) assets at replacement or market value; (2) the income-tax basis of items; or (3) future earning power), there would be less need to revise terminology. There would also be less need to "refine" reported net income by allocation of income taxes which latter procedure may, of itself, further imply an exactness in reported net income which does not exist.
>
> . . . I can see no compelling reasons why any corporation should . . . provide for income taxes, by charges against income . . . in excess of the amounts determined by application of the provisions of the Internal Revenue Code and related regulations to the transactions which took place during the year.
>
> . . . No corporation should be required to provide for income taxes by charges to income of amounts in excess of the legal liability therefor . . . [9]

The general conclusion of this paper must be: the statement of income for a given corporation for any given year

[9] *The Journal of Accountancy*, September 1958, pp. 44, 49, 50.

should contain a deduction *only* for the income taxes payable to the United States Treasury for that year. A provision for income taxes is a period debit to profit and loss. No part of such a provision is allocable to future periods of income because the allocation lacks the proof of either a legal liability or of a current "asset" (i.e., "inventory") value. Any significant difference between accounting net income before income taxes and taxable net income can be adequately and satisfactorily explained in a footnote to the statement of income. The income statement, prepared in this manner, will be fairly stated; it will be factual; it will accord with the precept of "full disclosure"; it will be understandable; and it should be *useful* to intelligent managements and statement-readers alike.

# "DIRECT" COSTING FOR EXTERNAL REPORTING[*]

CHARLES T. HORNGREN
*Associate Professor, University of Chicago*
AND
GEORGE H. SORTER
*Assistant Professor, University of Chicago*

RECENT accounting literature has abounded with discussions of *variable costing*, more often inaccurately termed *direct costing*. Although the usefulness of variable costing for internal reports has been generally admitted, variable costing is still considered unacceptable for external reports.

In this paper we will examine the suitability of variable costing for external reports. We will analyze the assumptions underlying variable and conventional costing, their relationship to existing accounting thought as to assets and expenses in general, and finally evaluate the two techniques for external consumers of financial data. We will attempt to show that:

(a) Variable costing concepts rather than conventional costing concepts are more consistent with the existing framework of "generally accepted accounting principles."
(b) Variable costing will provide users of external reports with more helpful information than is presently available.

### *Definition of Variable Costing*

Variable costing is the inventory costing method which applies only variable production costs to product; under this method fixed factory overhead is not assigned to product. Typically variable production costs are direct material costs, direct labor costs, and variable overhead costs. Variable costing differs from *conventional costing*, sometimes called *absorption costing*, because fixed factory overhead is treated as a period cost (charged against revenue immediately) rather than as a product cost (assigned to units produced).

Advocates of variable costing maintain that the fixed portion of factory overhead is more closely related to the capacity to produce than to the production of specific units. Opponents maintain that inventories should carry a fixed cost component because both variable and fixed costs are necessary to produce goods; both these costs should be inventoriable regardless of the differences in their behavior patterns.

## ASSET OR EXPENSE

### *Timing*

The difference between variable and conventional costing is really one of timing. Proponents of variable costing contend that fixed factory overhead costs become expenses as incurred, while opponents insist that such costs become assets until the goods to which they are related are sold. Thus the issue depends upon the nature of *asset* and *expense*.

Although many definitions of assets have been advanced, there seems to be wide acceptance of the concept of assets as service potential and somewhat less clear acceptance of the concept of expenses or losses as the expiration of service potential. For example:

"Assets are economic resources devoted to business purposes within a specific accounting entity; they are aggregates of service-potential available for or beneficial

[*] The authors acknowledge the help of their colleagues, Sidney Davidson, David Green, Samuel Laimon, William Paton, and of William Vatter, University of California, Berkeley.

to expected operations. The significance of some assets may be uniquely related to the objectives of the business entity and will depend upon enterprise continuity."[1]

"When the service potential of a given asset is no longer available to the enterprise . . . the acquisition cost of the asset, as modified by events subsequent to acquisition, should be eliminated from the accounts and any final gain or loss on disposition recognized."[2]

"Any type of cost may be deferred if it originates in a justifiable expenditure and represents a factor from which future benefit or contribution can *reasonably* be anticipated."[3]

The AAA committee referred to asset expiration as follows:

"Expired costs are those having no discernible benefit to future operations. They may be classified as 'expense' or 'loss'."[4]

According to these definitions, costs are assets if they can justifiably be carried forward to the future, if they bear revenue-producing power, if they are beneficial to future operations—if they possess service potential. Thus the justification for treating fixed factory overhead as an asset must meet the test of service potential. The issue becomes service potential versus no service potential.

### *Expectations and Assumptions*

The concept of service potential depends on expectations. Some assumptions about the future are necessary to make the idea of service potential meaningful and measurable. Expectations or anticipations are an integral part of the decision to hold back a cost as an asset, to transfer the cost to another asset class, or to release the cost as expense or loss.

The assumptions that underly decisions as to asset versus expense must be widely applicable and reasonable. The requirement for an asset is that ". . . future benefit or contribution can reasonably be anticipated." It is doubtful that any cost carried as an asset could meet the extreme test of benefiting the future under any and all eventualities including such possibilities as atomic war or acts of God. At the other extreme, many expenses could be classified as assets; special assumptions about the future could demonstrate that many costs, which are ordinarily treated as expenses, have some service potential.

The issue of variable costing ultimately rests on the reasonableness of the assumptions underlying the treatment of fixed factory overhead and their consistency with the assumptions underlying the treatment of assets and expenses in general.

### *Going Concern*

The major assumption that supports the dichotomy of asset or expense is as follows:

" 'The going concern' concept assumes the continuance of the general enterprise situation. In the absence of evidence to the contrary, the entity is viewed as remaining in operation indefinitely. Although it is recognized that business activities and economic conditions are changing constantly, the concept assumes that controlling environmental circumstances will persist sufficiently far into the future to permit existing plans and programs to be carried to completion."[5]

The going concern postulate is surprisingly the only assumption about the future needed to demonstrate service potential for any unexpired cost—except in the case

[1] Committee on Concepts and Standards Underlying Corporate Financial Statements "Accounting and Reporting Standards for Corporate Financial Statements 1957 Revision," THE ACCOUNTING REVIEW, October 1957, p. 538.

[2] Committee on Concepts and Standards, *loc. cit.* p. 540.

[3] W. A. Paton and A. C. Littleton, *An Introduction to Corporate Accounting Standards.* (American Accounting Association, 1940), p. 65. (Emphasis supplied)

[4] Committee on Concepts and Standards, *loc. cit.*, p. 541.

[5] Committee on Concepts and Standards, *loc. cit.*, p. 537.

of fixed factory overhead, as we shall soon see.

*Assets Should Be Relevant Costs: A Corollary View*

Accounting is a tool for decision-making by managers, investors, and all interested parties. Usefulness for decision-making thus becomes the overriding criterion for judging existing financial reports.

Relevant costs are the only costs that have a bearing on managerial or investment decisions. But what are relevant costs? Relevant costs are those costs that will be different between two or more future actions, those costs that may be avoided by not undertaking a given alternative. Irrelevant costs are those that have no influence on a decision because they remain the same for all alternatives regardless of the choice.

If a given cost has no influence on future operations, it is irrelevant and not helpful for decision-making. Therefore, assets should consist only of relevant costs, costs that will influence future results. If costs will not have an impact on future results, they have no service potential because they cannot affect future cost incurrence.

We submit that costs must be relevant costs in order to be termed assets. But relevant to what? Some series of events must be anticipated to which these unexpired costs will relate. Again the reasonable assumption is enterprise continuity (going concern).

A cost is an asset if it is relevant to the future as envisioned by the going concern concept. As service potentials, assets represent rights to future usage of bundles of services for the benefit of the enterprise. The very recognition of the asset implies that a decision has been made about the future. We submit that a cost has service potential, in the traditional accounting sense, if its incurrence now will result in future cost avoidance in the ordinary course of business. In other words, assets (unexpired costs) ordinarily represent costs whose reincurrence is unnecessary in the future. If future cost avoidance will not be affected by the cost in question, the cost has no relevance to future events and therefore cannot embody any benfit, any future service. Irrelevant costs, given the going concern assumption, cannot be assets.

Expressed another way, if the total future costs of an enterprise will be decreased because of the presence of a given cost, that cost is relevant to the future and is an asset; if not, that cost is irrelevant and is expired. Conceptually, a given cost can reduce future costs in two ways; (1) by avoiding the reincurrence of the same type of cost or (2) by reducing a different cost (possibly an opportunity cost) in the future.

In practice, only the first type of cost avoidance is capitalized. The most widely applied test to determine if a cost is an asset is whether the absence of a given cost would necessitate a replacement expenditure to sustain normal operations as a going concern. As will be discussed below, merchandise inventory is a cost avoidance of the first type and is capitalized; whereas an employee training program, which easily may represent a cost avoidance of the second type (i.e., avoid future losses caused by insufficient training), is typically expensed.

This orientation thus takes on a replacement cost flavor with, however, original cost as a maximum boundary. A strong case may be made for the traditional accounting view that no more than the original cost of an asset should be charged to income over the asset's life. The original cost is an objectively verifiable, unambiguous amount. However, the allocation of part of that original cost to one period or another is necessarily subjective. Without violence to the original cost restraint, such

allocation should be consistent with the concept that an asset is the present value of its future services. The appropriateness of the original cost restriction need not and should not concern us here. The notion of an asset as future cost avoidance is valid with or without the original cost restrictions.

### *Operational Meaning*

Let us consider the notion of future cost avoidance by looking at a few examples.

The merchandise inventory of a retail firm is an asset. It can be thought of as the right to use (i.e., sell) this merchandise without reincurring the purchase costs already incurred. Accepting the going concern assumption, this right reflects future benefit because the incurrence in the past avoids future purchases that would be needed in order to carry on normal operations. Note carefully that we are saying that the cost of merchandise inventory is relevant to the future of the going concern because the absence of the inventory would entail a future outlay in order for the firm to be in the same position to conduct normal operations.

Prepaid rent, unexpired insurance, and other prepayments of this type may also be thought of as the right to use physical facilities, the right to insurance protection, and so forth without reincurring the costs already incurred. These rights are assets because their absence would require new acquisitions of the same kinds of costs in order to sustain operations.

Similarly, plant, equipment, and the land are assets because they embody rights of future usage without reincurring these costs. Plant and equipment costs are relevant to the future because the going concern could not normally operate in their absence without reincurring some fixed asset costs (rent or capital outlays).

Conceptually, any cost that will result in some future cost avoidance is relevant and is an asset. If assets are considered from this viewpoint, the going concern concept is ordinarily the only assumption needed for determining service potential.

Following this approach, any past cost incurrence that will not result in some future cost avoidance cannot qualify as an asset. For example, an inventory that does not imply future cost avoidance cannot be considered an economic good and therefore is not an asset. Assume that a homeowner pays a flat $2.00 per month for all the water he can use. If he kept an inventory of 100 jugs of water at the end of each month, this inventory would not be an asset. It is true that the homeowner may need to use water in the future in the course of normal operations. But his 100 jugs have no bearing on future cost incurrence; his total future costs are not affected by his decision to inventory water. He can obtain all the water needed in the future at no incremental cost. The crucial test is future cost avoidance. If an item can be replaced and used in normal operations at zero incremental cost, its presence or its physical amount does not represent service potential; in other words, its absence would have no impact on total future costs.

But factories do not have unlimited output

But he cannot sell his water

### *Nature of Variable Factory Costs*

In normal circumstances direct materials, direct labor, and variable factory overhead costs are assets because a decision to incur them in one period will reduce total future costs. Their absence would necessitate replacement expenditures to sustain normal operations as a going concern.

### *Nature of Fixed Factory Overhead*

Proponents of conventional costing maintain that income is greater when production exceeds sales than when production is at the same level as sales, because fixed facilities are better utilized and render more benefit in the form of inven-

tories that will bring future revenue.

Proponents of variable costing maintain that fixed factory overhead provides capacity to produce. Whether that capacity is used to the fullest extent or not used at all is usually irrelevant insofar as the expiration of fixed costs is concerned. The salient factor is that production in advance of sale usually does not avoid any fixed factory overhead costs in future periods. The incurrence of fixed costs in a current period ordinarily has no bearing on the reincurrence of the same kind of fixed costs next period. As the clock ticks, fixed costs expire, to be replenished by new bundles of fixed costs that will enable production to continue in succeeding periods.

### FIXED FACTORY OVERHEAD AND ASSETS

Fixed factory overhead is inventoriable only when it represents service potential, only when the utilization of these costs through production this period will reduce total future costs. Under what assumptions will this latter situation occur? Only if failure to produce now would lead to additional costs in the future period. In other words, if inventory was not built up during the current period, additional costs would have to be incurred in future periods in order to sustain contemplated operations.

What assumptions about the future are then necessary to justify the inventorying of fixed factory overhead?

#### *Assumption 1*

*Future production at maximum capacity with future sales in excess of capacity by the amount of increase in ending inventory.*

If and when this joyful situation prevails (it ordinarily will not last long for the typical business), the utilization of fixed costs to increase inventories in a current period represents service potential. If inventory was not increased now, future sales could not be won without subcontracting or building additional plant. Both alternatives would ordinarily entail extra cost incurrence in the future period that would be avoided by an inventory build-up this period. Therefore, in these circumstances, fixed factory overhead represents service potential. Note that fixed factory overhead will be reincurred in subsequent periods. The point here is not related to reincurrence of the same type of cost; it is related to the idea that without an inventory build-up, extra costs of some sort (apart from those fixed costs which will be reincurred anyway) would be needed in a succeeding period or else future sales would be lost (an opportunity cost).

#### *Assumption 2*

*Variable production costs are expected to increase* e.g. OT PREMIUM

The decision to produce now will save variable production costs amounting to the difference between incurred and expected variable costs. This difference may justifiably be capitalized. In other words, increased present utilization of fixed factors of production will result in future cost savings. But note that the savings in question are variable, not fixed, costs.

#### *Additional Assumptions*

The capitalizing of fixed factory overhead in the foregoing two situations involves much more than the going concern postulate, which is usually the only assumption necessary to establish service potential. The only test that is ordinarily needed to justify holding back a cost as an asset is whether its absence would necessitate a replacement expenditure to sustain normal operations as a going concern. In the cases just cited, the justification for capitalizing fixed factory overhead rests on managerial anticipations of future cost savings which are apart from the fixed costs that will need to be reincurred.

While the justification for inventorying

variable costs rests solely on the going concern concept, the inventorying of fixed costs demands additional assumptions as to particular future happenings. Yet proponents of conventional costing generally oppose the formal capitalization of future savings or profits. For example, the savings from fortuitous purchases of raw materials or supplies are not ordinarily capitalized. J. M. Clark's observation is pertinent:

> Labor turnover is a recognized cost, and is increased by irregularity of output. If it is a case in which the falling-off in demand is clearly temporary, then anything which serves to keep any part of the force occupied instead of turning them off will reduce by that much the cost of building the force up again when business revives. Thus business which serves to fill up the hollow of a depression may be credited with a saving in some expenses that have not yet been incurred. This is clearly "not a problem in accounting, but in business," for accounting can hardly be expected to rely upon quite such an uncertain bit of prophecy for such a radical act as making a deliberate deduction from current operating expenses.[6]

The above reasoning leads us to the conclusion that the capitalization of fixed factory overhead is justified only when there is convincing evidence for the validity of the assumptions beyond the going concern assumption. We suggest that fixed factory overhead might be an asset but only under atypical conditions. For example, for certain seasonal business the *additional* assumptions beyond that of a going concern, such as Assumption 1, may be so convincing that fixed factory overhead should be capitalized.

### *Reasonableness and Consistency*

How reasonable is the assumption made in Case 1, namely, that sales will be above capacity for either a whole year or part of a year? Not much pertinent empirical evidence about production at capacity and sales above capacity is available. However, at the very least, we would expect sales in the period subsequent to the inventory build-up to exceed sales in the period of the inventory build-up.

Because inventory is increased in, say, year one, sales could not have been at a full capacity level. In order for sales to be above capacity in year two, a necessary (but not sufficient) condition would be an increase in sales. In order to test this necessary condition, a random sample of 100 industrial companies for the period 1952–58 inclusive was selected to see if a manufacturing inventory increase was followed by an increase in sales the following year.[7] In 53% of the cases, sales increased in the year after an inventory build-up, whereas in 47%, the sales decreased in the year following. At the 5% level of significance this divergence from a 50–50 proportion is not sufficient to reject the hypothesis that it is equally probable for an inventory build-up to be followed by a decrease rather than an increase in sales.[8] If there is some relationship between sales increases and the inventory build-up of the prior year, it is negligible.

Even if the assumption in Case 1 seems reasonable for certain companies (e.g., seasonal businesses not using the natural business year), it is quite different from and in addition to the going concern postulate.

The assumptions in Case 2 of rising variable costs may in fact be very probable. But this really involves capitalizing future variable cost savings, not a portion of fixed costs. Also, the capitalization of

[6] J. M. Clark, *Studies in Economics of Overhead Costs* (Chicago: University of Chicago Press, 1923), p. 51.

[7] Unit sales rather than dollar sales should really be used. However dollar sales, being readily available, were used under the assumption that price reductions in the period 1952–58 were not prevalent. If unit sales were available, our conclusions would be strengthened because prices generally rose in this period.

[8] The null hypothesis is that sales will increase 50% of the time and decrease 50% of the time following an inventory build-up. At the 5% level of significance we would not reject this hypothesis. The 95% confidence interval is $49.04\% < P < 57.80\%$ where P is the true population proportion or probability.

speculative future savings is far from compatible with existing accounting practice.

*Missed Sales Because of Lack of Inventory*

If production takes much time, failure to accumulate inventory in a given period may result in added costs or missed sales in the future. The pipelines must be filled to establish a base stock for sustaining sales. In a new company, there may be some justification for capitalizing initial fixed factory overhead because initial production enters the pipelines as a base stock. For a going concern, if inventory levels do not change, both conventional and variable costing will show the same income figure. Additions to inventory imply that without inventory build-ups, sales will be lost in the future. This is a strong assumption that is not supported by the foregoing empirical data. Presumably the minimum stock of inventory in year one is sufficient to take care of the lag between production and sales of that year; any additional build-up beyond the minimum can only be justified by either an increased lag or increased sales in year two. If we postulate that an increased lag is unlikely, then the only justification is future increase in sales.

The only general justification we can see for inventorying fixed factory overhead is the assumption that there is a perpetual lag; that is, without constant replenishment of inventory, the unfilled pipeline will result in missed sales. But this special assumption is again in addition to that of going concern. Making this special assumption carries with it an imposing measurement problem: determining the minimum levels needed to avoid disruption of operations. Only these minimums can justifiably carry a fixed factory overhead cost component. If this measurement problem is ignored, there is an implied assumption that all inventory at all times is not excessive. The latter assumption is probably unrealistic.

*Comparison with Conventional Assumptions*

The foregoing discussion has questioned the reasonableness of the particular assumptions about the future required to support the inventorying of fixed factory overhead. However, even if the reasonableness of these assumptions is granted for certain peculiar situations, such assumptions are in addition to that of a going concern. In fact, accounting seems to go out of its way to treat as expenses all sorts of cost incurrences when other assumptions (however rational) apart from the going concern postulate are necessary to establish service potential. Thus research expenditures, advertising campaigns, market research studies, and management training programs are often expensed even though no very heroic assumptions about the future are needed to make them represent service potential.

Conceptually, these costs may clearly be assets. But the problems of measurement are intricate and assumptions other than "going concern" must be made in order to postulate future cost avoidance. The going concern concept, therefore, generally prevails to the exclusion of all other assumptions.

Yet fixed factory overhead, which ordinarily does not represent an index of future cost avoidance, conventionally is inventoried on the basis of assumptions over and above that of going concern. The behavior of fixed selling, administrative, and factory costs is essentially the same. They are incurrred period after period, so that no single year's outlays represent future cost avoidance. Yet conventional costing singles out fixed factory overhead for special treatment instead of ranking these three costs abreast and treating them alike.

## UTILITY OF REPORTS

Many opponents of variable costing admit that it may be more useful than ab-

sorption costing for internal decisions but that income determination and annual reports should not be distorted by such a radical concept.

We find it strange that variable costing should be widely regarded as helpful to management but as useless, dangerous, or confusing to the intelligent investor. In substance, both management and investors have the same task, decision-making. Both groups are concerned primarily with future results. Why exclude the investor group from a useful analytical device and burden their task of interpretation by treating irrelevant costs as assets?

Accounting reports to both investors and managers should be useful for decision-making. As much relevant data as possible should be communicated. Assumptions underlying the data should be explicit, clear, unambiguous, consistent, and reasonable. The variable costing approach is straightforward—*fixed costs of production possess no service potential*. The assumption underlying this position is consistent with the going concern postulate that underlies accounting for other costs. The amount of fixed costs is stated. The investor may test the explicit variable costing assumption against his own and interpret the data accordingly, changing the inventory if he thinks fixed overhead possesses service potential.

Another favorable feature of variable costing is its emphasis on cost behavior. Information on variable and fixed cost factors are of utmost importance and relevance to investors. Any projection about the future depends on knowledge of such cost behavior.

Variable costing helps to predict not only income but also cash flows in relation to volume changes. The isolation of fixed costs in the income statement permits more accurate forecasts of minimum cash drains for supervision, property taxes, and other fixed expenses involving current outlays. It also helps in any attempt to correlate fluctuations in cash flow with fluctuations in sales volume.

We cannot accept the common criticism that the information needed for variable costing is unavailable or unmeasurable. Any competent management that uses flexible budget and standard cost systems must know a great deal about the cost behavior of the firm. Management must be acquainted with variability of costs in order to make necessary decisions. It is difficult, therefore, to accept the excuse that the computation of fixed and variable costs is a more imposing problem than, say, the measurement of "proper" depreciation allocations to cost centers and to products.

### *Conventional Costing*

To support conventional costing, ***fixed costs of production must be considered to represent service potential***. We have attempted to show that this position is based on assumptions that are valid only under atypical conditions. Further, the special assumptions necessary to establish service potential are in addition to the going concern postulate underlying assets in general. Also, these special assumptions are not easily understood. J. M. Clark commented:

> . . . The 'cost of production' resulting is not actual cost, average cost, normal cost nor differential nor marginal cost. It is actual direct cost plus 'normal' indirect cost: a compromise which must be appraised according to its results.[9]

In absorption costing, the difficulties of calculating the impact of changes in volume on profits include analysis of overhead absorption, applications of joint costs to products, changes in bases of cost application, and assumptions as to normal activity levels. Furthermore, the investor does not know the fixed overhead content of beginning or ending inventories. Nor does he know the effect on future income of the company assumptions that underly

[9] Clark, *op. cit.*, p. 254.

the inventorying of fixed factory overhead. He has no means of reconciling the implicit company assumptions with his own.

*Income Statement*

Δ var costs > Sales do not change income ?

The income concept underlying variable costing is clear-cut: income can change only if revenue or cost incurrences vary from period to period.[10] The income concept underlying conventional costing is obscure: income is a function not only of revenue and cost incurrence but also of production during a period. The stability, growth, or decline of inventories will influence reported profits. Consequently, variable costing will permit more accurate forecasts because net incomes will have a direct relationship with sales instead of the fuzzy, twisting relationship which results when sales, production, and changes in inventories are all considered.

*Balance Sheet*

Variable costing is also meaningful with reference to the balance sheet. Assets, including inventories, are carried at costs relevant to the future. The meaning of inventory under variable costing is clear. It is an index of the amount the company can save in the future by reducing inventory rather than manufacturing its needs. Looked at another way, it is the equivalent of the incremental cash that must be spent to secure additional inventory. Inventory policy decisions often involve the question of whether to convert cash into inventory and vice versa.[11]

## CONCLUSION

We believe that variable costing concepts for external financial reporting are respectable both from the viewpoints of the framework of accounting theory and analytical usefulness. But we do not swallow the notion that variable costing is appropriate in all situations.

We have shown that the assumptions underlying variable costing seem more consistent with assumptions typically made in accounting. Fixed costs should be inventoried in situations such as interim financial reports for seasonal businesses where the justifying assumptions which are needed in addition to the going concern assumption are supported by convincing evidence. The practical application of this latter suggestion for yearly statements would be hampered by necessary conjecture as to future operating levels. Sustained operation at peak capacity is a happy circumstance that few companies enjoy for very long.

The basic issue is whether fixed factory overhead represents service potential. A cost represents service potential only if in the ordinary course of business it will reduce total future costs. Although variable costs in inventory represent savings in future costs, fixed costs in inventory clearly do not in most instances. Fixed costs must be reincurred in the future period regardless of beginning inventory levels, while the amount of incurrence of variable costs in the ensuing periods is affected by beginning inventory levels.

In any event, the usefulness of conventional financial statements will be enhanced by stating explicitly the total amount of fixed factory overhead incurred and that portion released from or added to inventories.

Adherents of full costing recognize that there are different cost calculations for different purposes and that there may be different revenue calculations for different purposes. Yet these adherents draw their swords to protect the sacred cow of absorption costing for external reporting, as if existing concepts and reports are conceptually and pragmatically perfect. We be-

[10] See George H. Sorter "Reported Income and Inventory Change" *The Journal of Business*, January, 1959, pp. 47–51.

[11] "Direct Costing," *NAA Research Series #23*, April, 1953, p. 1121.

lieve that variable costing is conceptually and pragmatically superior to absorption costing.[12] Variable costing rather than conventional costing is more consistent with the existing framework of accounting principles.

The conceptual framework for income statements and balance sheets allows such a wide leeway that ten independent accountants would probably show ten different income figures for the same company for the same time period. Such varying results are influenced by a number of factors, one of which is the selection of standard or normal activity levels for setting factory overhead rates. Other influential factors are individual interpretations about such issues as the variety of acceptable inventory methods, stock options, depreciation, pensions, research costs, and non-recurring gains or losses. Accountants will accept a wide range of different net income computations as falling within a band of acceptability. It is time for variable costing to be welcomed to the club!

[12] This conclusion does not imply that variable costing is a panacea for the problem of defining and measuring an asset.

# MEASUREMENT IN ACCOUNTING

RICHARD H. HOMBURGER
*Associate Professor, University of Wichita*

COMPARATIVE studies of accounting and other fields of knowledge have so far been rather rare. For the most part, those studies are concerned with the functional interrelationships between accounting and those disciplines which, by their very nature, have a direct bearing on accounting concepts and procedures, such as economics and law.[1] Where an attempt was made to relate accounting to areas of study beyond the narrow confines of business, economics, and the law, writers have taken a defensive attitude.[2] Scholars in non-accounting fields have frequently regarded accounting as less scientific, less scholarly, and therefore less academically acceptable than their own respective fields. Such an attitude, where it still exists, can probably be explained by historical factors which have no bearing on accounting as it presents itself today.

### *Measurement and the Scientific Approach*

One of the earmarks of the scientific method in our time is the quantitative approach, the measurement. This is more strikingly so at present than it was in the past. In the natural sciences, exact quantitative measurements have been basic tools since ancient times. However, great strides are being made in applying quantitative methods in the behavioral sciences, in psychology and education, scientific management and industrial relations, and in the solutions of social problems generally.

It seems odd that in accounting which by its very nature is concerned with monetary, therefore measurable, values, the concept of scientific measurement has been slow in developing. Since ancient times, accounting has been primarily concerned with the recording of the facts of a transaction, such as receipts or disbursements, and the value placed on the transaction was of only incidental significance. Some ancient Greek temple records show receipts of money in other than the conventional currency simply recorded in kind, i.e., without any attempt at evaluation.[3] Pacioli in his *Summa*,[4] shows that he is aware of the value problem in recording transactions; but his method of determining such value is crude and apparently not of prime concern to him. American accounting records of the 18th century still show a certain lack of consistency in measuring the value of accounting entries.[5]

Only since the industrial revolution has the measurement of accounting values, as compared to recording techniques, received increased attention. The development and gradual refinement of cost accounting methods involved not only the determination of costs, but also analytical processes and comparisons between cost items which made scientific measurement of the primary data a logical prerequisite. The expansion of the corporate form of business

---

[1] See the articles by Wheeler on "Economics and Accounting," and by Magruder on "Law and Accounting," in Backer's *Handbook of Modern Accounting Theory*, Prentice Hall, 1955; also Mattessich "The Constellation of Accounting and Economics," THE ACCOUNTING REVIEW, October, 1956; and Perry "Accounting and Economics," THE ACCOUNTING REVIEW, July, 1958.

[2] See Hatfield "An Historical Defense of Bookkeeping," *The Journal of Accountancy*, April, 1924; and, more recently Cullather "Accounting: Kin to the Humanities," THE ACCOUNTING REVIEW, October, 1959.

[3] G. E. M. de Ste. Croix, in Yamey and Littleton, *Studies in the History of Accounting*, Richard D. Irwin, Inc., 1956, p. 24.

[4] Reproduced in substance in Littleton, *Accounting Evolution to 1900*, American Institute Publishing Co., 1933, p. 63 ff.

[5] See Benjamin Horrock's records as reproduced by Baxter in Yamey and Littleton, *Studies in the History of Accounting*, pp. 276–77.

and the resulting necessity of making financial data available to a broader public, on the other hand, led to comparative statements and the establishment of various kinds of ratios which required a refinement of tools in measuring primary balance sheet data. This shift in emphasis from the recording to the measurement aspect, from the historical to the analytical approach, has been gradual throughout the first half of this century, but has been greatly influenced by the rapid development of scientific management since the 1920's.

Such rules of measurement as were developed by the accounting profession were evolved under the pressures of accounting practice and, to some extent at least, represent a codification of practices several centuries old. The cost principle, as it is applied by accountants in the initial recording of transactions, probably is supported more strongly by the practical need for verifiable evidence than by a desire to measure economic value. The principle of conservatism is based on consideration of public policy rather than on theory. Accountants are generally aware of the limitations of their system of measurements. However, they are frequently hesitant to discuss alternatives to accepted rules of measurement or even to explain satisfactorily to non-accountants and to the general public the differences in their own approach to measurement as compared to approaches taken in other fields. Those studies which have been undertaken to clarify the accountants' approach to measurement were, for the most part, made by economists.[6] In this writer's opinion, accountants could and should become more aggressive in this regard. By comparing and justifying their own techniques of measurement as related to those applied in other fields, they may enhance the prestige of their own discipline as a truly scientific endeavor and possibly stimulate investigation in the general area of measurement.

### *Measurement in the Physical and Social Sciences*

It is not the purpose of this paper to deal extensively with the theories and problems of measurement in the physical and social sciences.[7] Rather, it is intended to suggest some basic ideas on measurement by which accounting measurement can be evaluated and placed in proper perspective.

Measurement in the physical sciences is a generally accepted tool whose reliability is not subject to human judgment, taste, or opinion. Length or distance may be measured in inches, yards, or miles. Once a standard of measurement has been set, however, there is little question that a stick two yards long has the same length, or extends over the same distance, as another stick or a ribbon two yards long. We also accept as fact that two yard sticks, placed together, will cover the length of one stick two yards long. Other physical measurements, such as weight or temperature, may not be as easily understood by the layman; nevertheless, once the unit of measurement has been established, we process the results of our measurement by the conventional mathematical techniques and do not question our findings as a matter of personal judgment or opinion.

quite naive

In measuring human abilities or qualities, an arbitrary standard must be set. We may design a test for first year accounting students by constructing a number of problems of varying difficulty. The student with poor ability will solve only the easiest of these problems, the brilliant

[6] Outstanding in this respect is John B. Canning, *The Economics of Accountancy*, Ronald Press, 1929. See also J. Maurice Clark, *The Economics of Overhead Costs*, The University of Chicago Press, 1923.

[7] For a good survey of the various theories, see Churchman and Ratoosh, *Measurement—Definitions and Theories*, John Wiley and Sons, 1959.

student will solve all. By assigning point values to the various problems we obtain a score which can be processed algebraically; it can be compared, added, averaged. It can even be related to scores or grades made by the same student in other areas, such as foreign languages or music, to obtain a so-called scholastic index. But the reliability of any index so obtained is limited by the degree to which the component test standards are objective or subjective, i.e., independent or dependent on the judgment or opinion of any particular person, group, or society.

When it comes to the measurement of esthetic, ethical, or social values, we might use the same procedure as is used in measuring skills. We might set an arbitrary standard of perfection for a work of art, and then "grade" a variety of art products by assigning grade points to them. Or, we might find a more objective scale of value measurements by having a group of subjects indicate their preferences and evaluation of the various choices, and by then consolidating the results obtained in a more or less objective value scale. Any such scale is, of course, entirely dependent on the judgment and taste of the subjects polled and subjective to that extent. But it may have practical value nevertheless.[8]

### *Special Aspects of Measurement in Accounting*

Conventionally, the main purposes of measurement in accounting are the determination of financial position and operating results of an enterprise. To determine financial position it is customary to place a value on all enterprise assets and liabilities. The net equity need not be valued; it is simply the net difference between asset measurement and liability measurement. To determine operating results for a given period, accountants place a value on revenue received or earned and deduct the value of the costs paid or incurred to produce the revenue. The net difference represents the accountant's measure of net income or loss. This amount, to the extent that it is not withdrawn from the enterprise, increases the measure of enterprise equity. Since, in the accountant's view, income and equity are inter-dependent, the standard of measurement must be the same for both

The financial values placed on assets and liabilities, revenues and costs, are social rather than physical in character; they depend on and are subject to the judgment and preference of man as a social being. This fact is often overlooked or ignored by the public. One reason for this common error is that for the accountant the unit of currency provides a universal and generally accepted standard which, under certain conditions, may yield a measure as unquestionable and as undisputed as a measure of length or weight used in the natural sciences. Assume a very simple service-type enterprise with no investment in tangibles or intangibles other than cash, all revenue being received and all costs being paid in cash. Income and equity would be measured by a simple recording process. Such a measure would, of course, not take into account any changes in the value of the currency itself.

Assets other than cash are traditionally entered on books of account at their acquisition cost. This practice, as old as accounting itself, undoubtedly was suggested originally as a convenient means of providing an easily verifiable record rather than as a method of valuing the asset acquired. That acquisition cost is a subjective measure has never been questioned by accountants. The amount of the cost of an asset to any particular business is dependent not only on the time and place of acquisition, but on the judgment, hopes,

[8] For a discussion of the methods of measuring social values, see Thurstone *The Measurement of Values*, The University of Chicago Press, 1959.

fears, and preferences of the buyer as well as of the seller. While cost, as a measurement, is subjective with regard to those factors, it is also objective to the degree and extent that cost reflects an existing market price. This has led to the unavoidable question whether a measure based on current market value would not be preferable to cost, if substantial differences exist between the two.

Much of current thought on measurement in accounting is preoccupied with the measurement of income. Here the primary and most common objective is to measure the revenues and related costs of a particular enterprise under particular conditions, in order to compare those with some more objective standards. A certain degree of subjectivity in measurement seems unavoidable and even desirable here to meet the need for constructive comparisons. Not only must expired asset costs represent the actual costs incurred by the enterprise rather than the hypothetical cost which would have been incurred under certain conditions; these costs must be allocated to periods so as to best reflect the contribution which actual costs incurred made to actual revenue produced over a given period of time, a matter largely dependent on judgment and not easily accessible to objective measurement.

This practical need for a degree of subjectivity in the measurement of expired costs, and the technical inter-relationship between expired costs and asset values on record has led some accountants to view the modern balance sheet of a going concern as a relatively insignificant array of various invested funds and unexpired costs, formally added and balanced only to prove the clerical accuracy of the detailed data presented. They are encouraged in their view by the apparent inconsistency and inconclusiveness of total and subtotal figures obtained from detail data valued at differing bases, such as cost, adjusted cost, market, and lower of cost or market. In contrast with this view, however, is the importance which the general public attaches to the amount of reported net worth, and the many ratios which are used in analyzing financial data and which make use of those total and subtotal figures. If a total obtained from data measured by different standards is to be considered inconsistent, then any ratio based on such totals, no matter how consistently computed, can hardly be considered a scientific measurement. If, on the other hand, the standard of measurement applied to each kind of assets is the best available to measure that particular kind of asset under prevailing conditions, then the total obtained, even though based on different kinds of measurement, gains sufficient significance to be useful in further analytical processing. It may well be argued that fixed assets acquired for production and not for sale best reflect their monetary value in a going concern if measured at unamortized cost, while temporary securities acquired for resale are most appropriately valued at market. A total obtained in adding the two kinds of values can hardly be considered any less scientific or consistent than a scholastic index obtained by adding a student's score in Accounting taken from a standardized achievement test and his score in Public Speaking taking into account the quality of his showing in an oratorical contest. Since both kinds of measurements discussed here are of a social rather than a purely physical nature, the significance of these measurements is limited by the degree of subjectivity in each standard of measurement applied. This, by itself, does not make the measurements and their use unscientific or inconsistent.

Again, whether receivables and payables due at some future date should be measured at their face value—a valuation device most closely reflecting the legal

point of view—or at their current discounted value,[9] depends on the general use being made of funds in an enterprise. The discounted value basis reflects the economic concept that all available funds are placeable at a given annual rate of interest. As the actual use of funds is subject to managerial discretion and a variety of internal factors, the measurement of monetary claims must be subjective to that extent, regardless of any fixed rate of discount which may be used in their valuation. Recognition of this subjective factor may justify the convenience of valuing them at their face amount.

It should be pointed out that the matter of price level adjusted accounting and reporting is not one bearing directly on the main issue discussed in this paper, namely the subjectivity of accounting measurement due to the social factors of judgment and preferences involved. Rather, it is the matter of coordinating measurements taken at different points of time where the passage of time has a measurable effect in expanding or contracting the very scale of measurement used in accounting, that is the value of the currency itself. It was apparently from this point of view that the Committee on Concepts and Standards of the American Accounting Association recommended in 1951 that the effects of price fluctuations upon financial reports be measured by a general price index.[10] It was felt that the use of replacement cost of specific types of assets would destroy to a considerable extent the objectivity of accounting. On the other hand, in its 1957 revision of the Statement of Concepts and Standards the committee comes to the conclusion that

"Supplementary data may be reported to reflect the effect of price level changes in the specific assets held by the enterprise during the period, to show the effect upon the enterprise of movements in the general price level, or to achieve both purposes. . . . Uniformity of accounting method is neither expected nor necessarily desirable, but reasonable comparability of reported data is essential."

The change from the requirement of objectivity in the 1951 statement to the requirement of reasonable comparability in the 1957 statement is significant. It appears to indicate a growing awareness of the subjective element inherent in all accounting measurement, resulting in a more liberal attitude toward less conventional methods of measurement for limited use.

Recognizing the subjective nature of all accounting measurement, the question arises whether accounting data taken from various sources can be consolidated for use in measuring financial facts pertaining to the economy at large. There is also a question concerning the validity of the aggregate data so obtained. Obviously the degree of subjectivity contained in the original data will be reflected in the aggregate data as well. On the other hand, the degree of consistency within the aggregate data will depend on the extent to which the original data used in the consolidation can be adjusted to bring them on as consistent a basis of measurement as possible. In any event, some degree of subjectivity as well as some degree of inconsistency can be expected in any aggregate measurements. Nevertheless, the degree of such subjectivity and inconsistency can be defined in terms of the degree of subjectivity and inconsistency contained in the original data.

### *Conclusions*

Measurement techniques used in modern accounting are no less scientific than those used in other fields. As the values measured in accounting are social rather than physical in character, a subjective

[9] This method is advocated by Canning, loc. cit., p. 210 ff.

[10] Accounting and Reporting Standards for Corporate Financial Statements, Supplementary Statement No. 2, Conclusions 4 and 5.

element enters into almost all accounting measurements. As in other fields of the social sciences the extent of this subjective element can be defined and controlled. Accountants are generally aware of this limitation, but they need to put forth a greater effort to make an educated public gain a fuller understanding of the problem involved.

Methods and techniques of measurement used in accounting and the limitations of these methods and techniques are not too different from those found in the social sciences. The standard of the currency and the market price offer the accountant tools of relative stability. On the other hand, the pressures of conventions and statutes work as a handicap in the full development of available techniques. By keeping abreast of techniques employed in other fields accountants may gain a better understanding of their own techniques and may be better able to make them understood by the public. It is also to be hoped that some of the techniques developed by accountants may contribute to the development of measurement techniques in other fields.

# EXECUTORSHIP REPORTING—SOME HISTORICAL NOTES

Leon E. Hay

*Associate Professor, Indiana University*

The earliest example of an executorship accounting report of which we have record is one prepared by the executors of the estate of Eleanor, consort of Edward I of England, who died in 1290 A.D. The concept of executorship is, of course, much older than that. Reppy and Tompkins report that:

> Documents resembling a will were in existence in Egypt five thousand years ago. The Code of Hammaurabi, King of Babylon 2285–2242 B.C., provided for both testate and intestate succession, and instruments classed as wills seem to have been recognized in Assyria, Hebrew countries, Greece, and Rome. By the time of Justinian's Code, 534 A.D., the Romans had evolved a will which in many ways, resembled the will which is recognized in modern American and English law.[1]

*Legal Background*

The Roman law of wills allowed the testator to name a *fiduciarius haeres* to act as his personal representative after death. The *haeres* discharged his duties under the supervision of a magistrate. It is known that the *haeres* was required to submit an inventory of the assets of the estate if he wished to limit his liability for the debts of the decedent to the value of the assets; whether any other accounting reports were required does not seem to be known.

Roman legal concepts were disseminated over the world as known at that time. In common with other institutions they were all but lost sight of for several hundred years. Legal historians say that in England, in Anglo-Saxon times and for two hundred fifty years after the Conquest, there was no such thing as a general representative of a decedent.[2] Executors were known, but their duties were restricted, until the thirteenth century, to the distribution of the personal property bequeathed by the decedent. The distribution of personal property was under the jurisdiction of the ecclesiastical courts, and if the decedent did not leave a valid testament (as the instrument in which a person directed the disposition of his personal property was called), or if the executor named in the testament could not serve, the estate was administered by the bishop of the diocese in which the property was located. In this period, the family of the decedent was liable for his debts whether or not he left sufficient assets to pay them. This rule worked a hardship on the heirs in many cases, especially since the officers of the ecclesiastical courts, if not the bishops themselves, were often overzealous in attempting to aggrandize the holdings of the Church (or their own personal fortunes) by retaining the assets of the decedent and leaving the liabilities for the heirs.[3]

In the thirteenth century executors were given the right by the second Statute of Westminster (13 Edw. I, c. 23) to sue debtors of the estate to collect the amount owing. The office of administrator was created in 1357 by the Statute of 31 Edw. III in an effort to alleviate the previously described abuses in the administration of intestate estates. In this period neither administrators nor executors were required by statute to submit inventories and accounts for all estates probated; however, collections of wills written in the fourteenth and following centuries indicate

[1] Alison Reppy and Leslie J. Tompkins, *Historical and Statutory Background of The Law of Wills, Descent and Distribution*, Probate and Administration (Chicago: Callaghan and Company, 1928) p. 14.

[2] *Ibid.*, p. 130.

[3] *Ibid.*, p. 116.

that inventories were frequently filed and accounts occasionally filed, apparently in compliance with court orders. It was not until 1670 that administrators were required by statute (22 & 23 Cor. II, c. 10) to prepare inventories and accounts, and 1705 (4 Anne, c. 16) that the same was required of executors. The ecclesiastical courts retained jurisdiction over the transfer of personal property until 1857 when the Court of Probate Act established a Court of Probate and gave it jurisdiction over decedents' property both real and personal.

For almost eight centuries before 1857 the distribution of real property of a decedent had been under the jurisdiction of civil courts. The decedent's wishes as to the disposition of his real property were expressed in a document called a "will." (The term today includes the former meanings of both "will" and "testament.") The influence of the feudal system was such that, before the passage of the Statute of Wills (32 Henry VIII, 1540), civil courts in many sections of England disregarded the will and distributed the real property according to local laws and customs. Both before and after the passage of the Statute of Wills, executors or administrators did not take title to real estate. The same is generally true today in the United States.

### *Early English Executorship Reports*

Executors in England during most of the eight-century period under discussion seem, in general, to have prepared their accounts in narrative form. The report of the executors of the estate of Eleanor of England, referred to in the opening sentence of this article, was prepared on a parchment roll. It is not illustrated in any books locally available, but it is said to show the payments for each day in narrative form, ". . . each day, week, and month being totaled up at the end, and the gross amount of each section being carried out into the margin, in a sort of elementary money column."[4] Brown indicates that this form of report was typical of the accounting reports prepared in thirteenth century England.[5] Clearly differentiated money columns did not come into general use in English executorship reporting for several centuries, judging from executors' statements included in collections of English wills of the fourteenth through nineteenth centuries.[6]

Two fifteenth century executors' statements are particularly interesting as examples of the evolution of reporting technique. The first, that of the estate of Bishop Skirlaw, who died in 1406, presents the inventory and report in narrative form with no clear separation between the two documents. No money columns are used, nor is there much grouping of like items, although the late bishop had been immensely wealthy and left a long will full of detailed directions as to the duties of the executors. The account apparently satisfied the court, for at the end of it is the inscription, "Compotus redditus et Executores dismissi 1 Feb 1407."[7]

In contrast with the report of Bishop Skirlaw's executors is that of the executors of Canon Duffield of York, who died in 1452. The executors of this estate evidently had access to better accounting advice than the ones of Bishop Skirlaw's estate because like items are listed in paragraph form, one after another within each paragraph, with the amounts of each shown. The "summa" of the amounts listed in each paragraph is entered at the end of the

---

[4] Arthur H. Woolf, *A Short History of Accountants and Accountancy* (London: Gee and Company, 1912), p. 94.

[5] Richard Brown, *A History of Accounting and Accountants* (Edinburgh: T. C. and E. C. Jack, 1905), p. 54.

[6] Various volumes of publications of the Surtees Society, the Selden Society, the Chetnam Society, and other English historical societies are devoted to wills and inventories of this period.

[7] These documents are reproduced in *Testamenta Eboracensia, Part I* (London: Surtees Society, 1836), pp. 306–325.

paragraph. The grand total is shown at the end of the statement. Money columns were not used in this statement either, however.[8]

The form of accounting report known as the "charge and discharge statement", which many writers have erroneously said was the form customarily used by English executors, was developed in Scotland in the fifteenth century by government accountants.[9] It was used in succeeding centuries by Scottish executors [10] and, even in the twentieth century, is said to be the form customarily used there. It was adopted by stewards of English manors and by accountants for various English governmental bodies, but does not appear to have been adopted on any large scale by English executors. The latter seem to have clung to the narrative form of statement until the methodology of double entry bookkeeping and the practice of drawing statements from ledger accounts became generally accepted.

Accounting histories say that double entry bookkeeping was introduced into England in the sixteenth century and the preparation of statements from ledger accounts was introduced in the seventeenth century.[11] Generally, histories discuss only commercial accounting and do not mention the adoption of such ideas in the area of executorship accounting. An examination of eighteenth and nineteenth century English accounting texts and collections of wills of that era indicates that executors' accounts were kept in double entry form in the eighteenth century, but that narrative statements were customarily used until the nineteenth century.[12] From that time until the present, English executors have apparently generally submitted their statements in the form of ledger accounts.[13]

### *Early Executorship Reporting in the United States*

English usages in both law and accounting were transplanted to the colonies in North America in the seventeenth and eighteenth centuries. English influence continued to be felt strongly in the nineteenth century and even in the early part of the twentieth, particularly in accounting. It is not surprising then that much of the discussion in preceding pages as to English executorship accounting holds true for American executorship accounting.

Historical societies in the United States have published many volumes of probate records. The earliest are those of Essex County, Massachusetts, for the period of 1635 to 1681.[14] The Essex County records consist of wills and inventories, but no executors' accounts can be found—apparently the court of that colony did not require them. The Provincial Court of Maryland did, however. In the records of that tribunal, under the date of "11 Octobr 1650" there is the following entry:

John Thumbleby Admr of Peter Mackarell ac-

[8] This report is reproduced in *Testamenta Eboracensia, Part III* (London: Surtees Society, 1864), pp. 125–152. The documents are in Latin, of course, but an English translation of the column headings of this statement is given by W. S. Holdsworth, *A History of English Law* (London: Methuen & Co., 1909), III, pp. 466–467.

[9] The terms "charge" and "discharge" are found in reports of an earlier date, but Brown, *op. cit.*, p. 58, states that the earliest example of a statement in the form called "charge and discharge" was that of the Lord High Treasurer of Scotland for the period 4 August 1473 to 1 December 1474.

[10] George Lisle, editor, *Encyclopedia of Accounting* (Edinburgh and London: William Green and Sons, 1903), II, p. 54.

[11] A. C. Littleton, *Accounting Evolution to 1900* (New York: American Institute Publishing Co., Inc., 1933), pp. 98, 130–140. Also Brown, *op. cit.*, pp. 126, 152–154.

[12] Two of the more interesting accounting texts are William Weston's *The Complete Merchant's Clerk* (London: R. Griffiths, 1754), and Thomas Dilworth's *The Young Bookkeeper's Assistant*, 12th ed. (London: A. Miller, 1792), or "new edition" (London: Thomas Wilson & Sons, 1822). Good references for late nineteenth century and early twentieth century practices are the various editions of Lawrence R. Dicksee's *Advanced Accounting* (London: Gee and Co.), Roger N. Carter's *The Student's Guide to Executorship Accounts* (London: Gee and Co., 1899), and Oswald Holt Caldicott's *Executorship Accounts*, 3rd ed. (London: Gee and Company, 1906).

[13] Lisle, *op. cit.*, p. 54, and F. Sewell Bray and Thomas Kenny, "Executorship Accounting Reconsidered," *Accounting Research*, I (1950), pp. 403–442.

[14] *Probate Records of Essex County, Massachusetts*, (Salem: Essex Institute, 1917) Vol. I, 1635–1664; Vol. II, 1665–1674; Vol. III, 1675–1681.

cording to a former order this day pduced his Accompt concerning the sayd estate to the court and prayed for his Quiet est. And the said Accompt being pvsed by the Court and found to ballance the totall of the Inventory and publique Proclamacon being made thereof in open court and noe obieccon made to the contrary The Court allowes of the Accompt and doth order that the Admr may have his Quietus est and the Bond taken for his true Administracon to bee voide and Cancelled.[15]

The "Accompt" is reproduced below the court order. It is merely a listing of items such as "by pd Willm Assiter by Bill 255" and "By pd for funerall charges 400." The items are not classified in any discernible manner, but are simply totaled.

The duties of Administrators in the colony of New York were set forth by "An Act for the superviseing Intestates Estates and Regulateing the Probate of Wills and granting of Letter of Administracon" dated November 11, 1692. It does not require the administrator or executor to submit either an inventory or an account. Courts evidently required an inventory in some cases, however, for inventories are found in conjunction with some wills.[16]

Judging from available records, the courts of Connecticut were comparatively strict about requiring inventories and accounts. An entry in the probate records of "4 January 1713–14" says:

John Humphrey and Samuel Pettebone of Simsbury, Adms. on the estate of John Mills, late of Simsbury Decd, exhibited an Account of their Adms:

| | £ s d |
|---|---|
| Inventory | 120-15-06 |
| The Real part whereof is | 75-10-00 |
| The Debts and Charges | 30-15-00 |
| There remains to be distributed | 92-06-00 |

Account Allowed. Order to Dist:[17]

The arrangement of the above account is quite neat, particularly for that time, but it seems to be lacking in clarity of explanation and accuracy of arithmetic.

The examples of eighteenth century American executors' accounting reports reproduced or described above seem to be typical of the ones which are published in compilations of colonial wills. If these compilations contain statements representative of the ones prepared in that century, and there is no reason to believe that they do not, it may be said that the level of accounting skill displayed by executors in America was no higher than that displayed by their contemporaries in England. In both countries executors' reports were generally little more than narratives. In neither country was the Charge and Discharge statement or the ledger account form of statement in general use.

The earliest American accounting text examined which contained a discussion of executorship accounting was a copy of *North American Accountant* by P. Duff, published in 1848.[18] Duff's treatment of estate accounting is similar to that of English authors of the time. He described the entries to be made for many different types of transactions and gave reasons for the entries he described, reasons which are still generally considered sound. Duff did not, however, present any suggestions as to the form of report to be rendered to the probate court, nor even mention that such a report was required.

Eighteen years after Duff's text appeared, Bryant, Stratton, and Packard published a book, *Bryant and Stratton's Counting House Bookkeeping*,[19] which appears to be the earliest American text to mention executorship reporting. The mention is brief, indeed, and the authors do not illustrate or describe any particular form

[15] William H. Browne, editor, *Archives of Maryland: Judicial and Testamentary Business of the Provincial Court 1649/50–1657* (Baltimore: Maryland Historical Society, 1891), p. 35.

[16] *Early Records of Albany: Mortgages, 1658–60, and Wills, 1681–1765* (Albany: The University of the State of New York, 1919).

[17] Charles W. Manwaring, *Early Connecticut Probate Records* (Hartford: Charles W. Manwaring, 1904), p. 573.

[18] P. Duff, *North American Accountant: Single and Double Entry Bookkeeping* (New York: Harper & Brothers, 1848).

[19] H. B. Bryant, H. D. Stratton, and S. S. Packard, *Bryant and Stratton's Counting House Bookkeeping* (New York: Ivison, Phinney, Blakeman & Company, 1866).

of report to the court of jurisdiction or to the heirs.

In the early years of the twentieth century the subjects of executorship accounting and reporting enjoyed a wide popularity in American accounting literature. In 1902 the Accountants' Guide for *Executors, Administrators, Assignees, Receivers* and *Trustees*, by Francis Gottsberger, was published.[20] Joseph Hardcastle's lectures before the New York University School of Commerce, Accounts, and Finance on "Accounts of Executors and Testamentary Trusts," were published in book form in 1903.[21] John R. Loomis contributed a comprehensive article on "Contents and Mode of Stating Executors' Accounts" to *The Journal of Accountancy* in 1907.[22] The efforts of these three men furnished a basis for Charles E. Sprague's chapter on "Fiduciary Accounts" in his text, *The Philosophy of Accounts*, published in 1908.[23] Gottsberger, Hardcastle, Loomis, and Sprague set the pattern used by most authors down to the present time.

---

[20] New York: George S. Peck, 1902.
[21] New York: New York University, 1903.
[22] Vol. III, pp. 219–232.
[23] New York: C. E. Sprague, 1908.

# THE MAGIC WORDS—"MANAGERIAL ACCOUNTING"

VIRGIL BOYD
*Associate Professor, Northwestern University*
AND
DALE TAYLOR
*Instructor, Northwestern University*

THE recent trend toward the "managerial approach" in teaching accounting is readily apparent in the curricula of many of the business schools in the country. The term has found favor with non-accountants as well as many accounting teachers. To the non-accountant the term "managerial" or "administrative" seems to denote a de-emphasis of the technical aspects of bookkeeping and greater emphasis on the use of accounting data. To the accounting teacher the term has much the same meaning except that it is his job to be more definitive. Accounting curricula, teaching methods, textbooks, and content of particular courses depend to a large extent upon the accounting teacher's definition. Unfortunately—or perhaps fortunately—there is no general agreement among accounting teachers as to the precise meaning of "managerial approach."

To examine precisely the meaning given this term by accounting teachers we might look to the specific content of so-called "managerial" courses. Such an investigation, however, would involve placing too much reliance upon catalogue course descriptions. We are all aware of the inadequacies of these descriptions. Even more impossible would be any attempt to try to determine how particular teachers employ the managerial approach. A remaining alternative is to examine the textbooks that are used in accounting courses. Most of the leading textbooks that are coming on the market make some claim to the managerial approach, and an examination of these texts may shed some light upon how accounting teachers interpret the term.

### *"Managerial Approach" as Represented in Textbooks*

Many textbooks which make some claim to the managerial approach are organized in much the same way as they have been for the past twenty years. The bookkeeping cycle and type of bookkeeping records are described in detail, the variations in the particular techniques applicable to different types of business situations are considered, and valuation and classification of different items for statement purposes are given considerable emphasis. The managerial aspects of the test are limited to some description of the use of ratios and comparative statements. Sometimes chapters on budgeting and cost accounting have been added in recent revisions of the text, but even in such cases the emphasis is upon the techniques for collecting and presenting financial data. The uses of accounting data are usually treated only sketchily; a typical treatment provides an itemization either in the introductory or closing paragraphs of a given chapter or section.

It is texts of this first type that have probably led to the charges by non-accountants that accounting is bookkeeping, a vocational course which is better taught in the high schools. We believe that these charges have been exaggerated. The au-

thors of these texts are well-qualified people. Their texts are based upon the belief that a person cannot effectively use accounting data and statements until he acquires an adequate knowledge of how such data are developed. The high positions attained by many who received their training from these texts is evidence that this approach has had some merit.

A second type of text which frequently bears a title denoting managerial or administrative accounting limits the description of bookkeeping techniques and records to a few introductory paragraphs and then launches into a rather intensive description of basic accounting principles underlying valuation, classification, and presentation. Sometimes an effort is made to compare economic and accounting concepts. The authors of these texts apparently feel that the use of accounting data depends upon a thorough understanding of underlying accounting principles. Accounting techniques are considered to be of secondary importance, and skill in the use of these techniques is developed to a limited extent by means of the problems at the end of each chapter. The use of accounting information in decision making is given no more emphasis than in the first type of text described.

A third type of text might be described as an annotated outline. Here the emphasis seems to be on covering as many topics as possible in as few pages as possible. "Putting meat on the bones" is left to the instructor. In addition to the topics covered in the most complete text of the first type described, some consideration is given to the use of the data. However, the discussion of any of the topics is so limited that the instructor may have to employ a supplementary text of another type if the course is to be satisfactory in meeting any set of objectives.

A fourth type of text places the emphasis almost exclusively on the use of data. Heavy emphasis is given to such control devices as cost accounting, budgeting, and project planning. In contrast to other types of texts very little consideration is given to the techniques employed in developing these control devices. Instead the emphasis is upon the use of these devices in controlling business operations and making decisions relative to future operations. Illustrative (real or fictional) business situations replace conventional problems as the vehicle for developing the student's ability.

Although not usually considered textbooks, casebooks or individually reproduced sets of cases represent a fifth approach to instructional materials. Some casebooks contain text material describing the accounting principles and techniques applicable to a particular set of cases, but more frequently this information must come from other sources. In some cases the student is asked to seek out this information himself from whatever sources are available. In other cases the instructor may provide the information by lecturing, assigning supplementary readings, or by helping the student to develop whatever knowledge of techniques and principles may be required.

This description of teaching materials may not be complete, but it is sufficient to indicate the wide variety of materials which make some claim to the managerial approach and which may be used by instructors who believe they are using the managerial approach. The "managerial approach" is not yet a recognized unique method of teaching accounting.

### *A Method of Describing the "Managerial Approach"*

What, then, is "managerial accounting" or the "managerial approach" that so many favor? Out of the many conflicting views one common theme seems to emerge. Every one seems to agree that some emphasis must be placed upon the *use* of accounting data, that the managerial ap-

proach is action oriented. It calls upon the student to make decisions on the basis of accounting data. The types of decisions that are expected from the students may vary depending upon the instructor, but there seems to be some agreement that the student must be able to apply his knowledge of accounting data to more than recording and classifying information for financial statements.

For a meaningful explanation of managerial accounting we might consider what is meant by an action oriented approach. The economist labels this type of methodology as the action frame of reference. He defines the action frame of reference by stating that *in the action frame of reference a rational actor with a well-ordered preference scale relates means to a desired end within a given set of conditions.* Is this the methodology of accounting? Is the conventional approach based upon this methodology? Is the managerial approach based upon this methodology? If both approaches do not employ this methodology, can we explain the differences in the approaches by contrasting the methodology employed?

### *The Frame of Reference of the Conventional Approach*

It might be argued that the conventional approach employs the action frame of reference. To use the economist's language the methodology of conventional accounting can be described as follows. The student is put in the role of the chief accounting executive (a rational actor). He uses accounting techniques (means) and accepted accounting principles and practices (well-ordered preference scale) in recording and classifying data. The desired end is a set of financial statements which others use and rely on because these statements have been prepared according to accepted principles and practices.

Some might object to this interpretation of the role assigned to the student under the conventional approach. As previously stated, the student's role is that of a preparer of information *for use by others.* Nevertheless, unless the instructor himself requires the students to use the information collected, it is doubtful that the student assumes any other action oriented role than that of a preparer of statements. Accounting texts for the most part do not suggest that he assume any other role. Furthermore it is not unusual that this is the role assigned to the student. Although it is much less true today, historically the role of the professional accountant has been to render an opinion on the adequacy of statements prepared for use by others. The CPA examination which is designed to measure professional competence stresses a knowledge of the techniques and principles used in preparing financial statements. Research within the professional accounting organizations deals almost exclusively with principles and practices to be employed in statement presentation.

No one can argue that the student of conventional accounting does not use a preference scale in relating means to an end. Accounting principles serve as the basis by which a student selects the proper techniques and practices to be followed in particular situations. Questions, problems, and practice sets are all designed to give the student drill in using techniques and principles.

Some might object to "the desired end" that the authors believe exist in conventional accounting—that of a set of well prepared financial statements to be used by others. Some might argue that their students are asked to use the statements in appraising particular situations. The results of examining texts hardly would support this argument. Furthermore the authors contend that the student is rarely aware of the use others will make of the statements. Few accounting texts point out that the statement preparation is dependent upon the use to be made of the

statements. In the few cases in which this is pointed out it is done in a descriptive and very unimpressive way.

*Contrasts in the Frames of Reference Used in the Two Approaches*

What about the managerial approach? Does it fit the action frame of reference in the same manner as the conventional approach? The answer is definitely no. Let us contrast the frames of references used with the two approaches.

First, the student of managerial accounting is asked to assume the role of an active member of management or some other group involved in making a decision. He is not asked to record and collect data for use by others, but rather to record and collect data that he feels is pertinent to a particular decision that he himself must make. The decision may relate to controlling particular phases of operations, evaluating the financial position of the firm for possible investment in the firm, or appraising the adequacy of the accounting system in light of the information required. This is a much broader role than that ordinarily assigned the student of conventional accounting.

As a second point of comparison, are the means and preference scale used by the students of managerial accounting similar to those used by the student of conventional accounting? The student of managerial accounting is asked to use his first-hand knowledge of the business world and the knowledge, skills, and attitudes developed in other courses of study. For example, a knowledge of the problems faced by the meat packing industry in pricing and marketing its products may be helpful in appraising the adequacy of the accounting system for a firm in this industry. Statistical techniques may be useful in planning future operations or appraising the results of current operations. In other words the student of managerial accounting needs a command of many more means and a broader preference scale than the accounting techniques and principles which are the means and preference scale used by the student of conventional accounting.

A third contract exists in the consideration of the conditions. Conventional accounting rarely sets forth any of the conditions in which the business operates. Characteristics of the industry, general economic conditions, qualifications of the employees, marketing and production methods of the firm, etc., are rarely mentioned. On the other hand the student of managerial accounting must have information about pertinent conditions if he is to make a decision. In fact conditions and means other than accounting techniques may be of primary importance in a particular decision.

Before proceeding with a comparison of the ends sought with the two approaches, some consideration might be given to the specific topics and particular teaching methods used in developing these topics. There is no real reason why any difference should exist in the topical material covered. However, the order of development of this material will likely vary. In the early phases of a course the basic concepts of debit and credit, definitions of kinds of accounts, and the accounting equation are likely to be considered regardless of the approach employed. Beyond this point the conventional approach relies upon a logical development of principles and practices used in preparing financial statements to provide continuity to the course. Continuity in a managerial approach is based upon the types of business problems being considered. Moreover since the primary purpose of a managerial course is to provide training for business managers, much greater emphasis may be given to some topics (budgets, cost control, project planning, etc.) that is given by the conventional approach in which statement

preparation is the basis for the course.

The teaching methods employed in developing the same topics may also vary as a result of the objectives of the two approaches. For example, under the conventional approach the rules of debit and credit are usually memorized and skill in their use is acquired by drill. Under the managerial approach the use of debits and credits as classification tools might be introduced after the student has been asked to classify information without such knowledge. He has found a real need for this orderly method of sorting and classifying before he is introduced to the tool.

Although this difference has been implied in the previous discussion, the final and most critical difference in the two approaches is in the end being sought. The conventional approach concerns itself with the preparation of financial statements exclusively. All the techniques and principles studied are related to the preparation of acceptable financial statements. In contrast, the first task of the student of managerial accounting is to identify specifically the business problem about which he must make a decision. Having defined the problem he raises the questions which are pertinent to the decision. These questions lead to the development and consideration of various means, conditions, and ranking principles to a degree sufficient to make a satisfactory decision.

It is this making of a decision about a business problem that is the real crux of managerial accounting. Many from a cursory examination of some case materials which are primarily descriptive in nature overlook this all important phase of managerial accounting. Although the authors do not favor the extensive use of descriptive cases, cases of this sort can call for decision making. For example, a case describing the cost system of a meat packing firm may provide a great deal of action oriented thinking if the student is first asked to identify the kinds of decisions that must be made on the basis of this system. Having identified the types of decisions the student may be asked to present alternative accounting systems which are feasible and which would better serve particular purposes.

### *A Summary of the Differences*

In summary the frame of reference used in the managerial approach is much broader than that used in the conventional approach. The specific differences are:

1. The managerial approach places the student in the role of a *user* of financial data in decision making. The conventional approach assigns the student the role of *preparer* of financial statements for use by others.
2. The student of managerial accounting is called upon to use his entire knowledge of the business world in making business decisions based upon accounting data. Conventional accounting limits itself to accounting techniques, principles, and practices, and rarely deals with decisions other than those required in the preparation of financial statements.
3. An attempt is made to consider the external and internal business environment in managerial accounting. Conventional accounting usually ignores these conditions.
4. The arrangement and emphasis of topical material differs under the two methods because of the difference in objectives.
5. The purpose of managerial accounting is to make a decision related to a business problem. Conventional accounting has as its end the ability to prepare adequate financial statements.

### *Recommendations*

This discussion may suggest that we believe that the managerial approach should be used exclusively. Such is not the case. Every one must examine his curriculum and courses in light of the objectives to be served by them. If the objective of the school is to train business administrators with little, if any, specialization, the managerial approach certainly has

merit. However, one must be careful to avoid the pitfall of emphasizing decision making at the expense of eliminating adequate preparation in accounting techniques and principles. The student may develop the habit of making decisions without any real understanding of how to use valuable techniques and practices.

As a first course in a professional accounting program, the authors would recommend the use of the managerial approach or some variation of it. Certainly the professional accountant today can not be thought of except as one who plays a very active role in business decision making. Any one who has had any experience will admit that regardless of the amount of detail that he may consider, his primary role is to use his knowledge to make or to help management make business decisions. Even the junior public accountant, who is usually thought of as a detail man, needs this training. One of the frequent criticisms of juniors by seniors and partners is that the junior gets bogged down in detail without recognizing what is relevant in particular situations. The managerial approach may be useful in remedying this defect.

On the other hand the conventional approach or some modification of it offers merit in particular instances. For an accounting major who is already aware of the uses of accounting data, the conventional approach may be the most economical method of developing the additional techniques and comprehensive understanding of accounting principles and their limitations. Drill, lecture, and discussion can all be used appropriately to make certain that no gaps have been left in his professional training.

The conventional and managerial approaches possess a common pitfall; there is the danger that the desired end may be emphasized at the expense of other important considerations. As pointed out above, the managerial approach may emphasize decision making without an adequate development of accounting principles and practices. On the other hand the conventional approach may emphasize preparation of financial statements without proper attention to the use to be made of the statements. To avoid this pitfall and to keep the use of the statements in the foreground, an instructor using the conventional approach may interject personal experiences or permit students to discuss their own business' experiences in class. Written business cases may also be used.

### *An Observation of Existing Accounting Instruction*

Having attempted to describe managerial accounting and to indicate how it might be employed, the authors would like to offer some defense of accounting instruction as it has existed. Accounting instruction has been condemned in high circles because of its emphasis on techniques. The managerial approach, although described in rather vague terms, is offered as the innovation to cure the ills of accounting instruction. Certainly it can not be denied that frequently techniques have been over emphasized. Despite this over emphasis, however, the accounting profession has attained a position of importance in business, a stature that every one recognizes. It is doubtful if this position could have been attained on the basis of a knowledge of accounting techniques alone. We would suggest that past accounting instruction helped the accounting profession attain its present position. In our opinion the purpose of recording and classifying financial information and the uses made of financial data have been emphasized much more than is commonly believed. How this was done is only conjecture, but perhaps much of it was done by the instructor relating real ex-

periences to illustrate various points. Certainly the number of CPA's on the faculties would indicate that a great number of accounting instructors have had experience in the business world which could be related in the classroom. In fact many accounting instructors have been using some form of the managerial approach long before the term itself became so popular.

This defense should not be construed to mean that accounting instruction can not be improved. Various aspects of the managerial approach suggest avenues of improvement. Greater emphasis on involving students in the use of accounting in decision making, consideration of the business environment, and the correlation of knowledge, skills, and attitudes acquired in other courses with those related to accounting principles and practices are some of the areas that offer opportunity for improvement. How and to what extent accounting instruction should move into such areas depends to some extent on the objectives of the school as a whole, the objectives of particular programs and courses, the capabilities and backgrounds of the faculties, and the financial and physical resources of the school. A complete shift to the managerial approach without consideration of these factors would be unwarranted and might endanger the entire program. The managerial approach offers possibilities, but it is not a cure-all.

# MANAGEMENT ACCOUNTING*

FRANK A. SINGER
*Associate Professor, University of Massachusetts*

IF ONE is to discuss "management accounting" one must know what it is. There is no common agreement so I make free to adopt a working definition, although before I am through I will have changed it. First, what do I mean by accounting? Accounting is an activity, a certain kind of data-collection. (The character of the activity is familiar to us all.) I am well aware that this is a very limiting definition. It may be protested that this activity can not go on to any meaningful completion without something more than collection being done. This, of course, is true. Several choices among acceptable conventions and several estimates are an inseparable part of reaching the summaries which are the goals of accounting routine, but these choices and estimates are *managerial*. I wish to distinguish the decisions which control the collection from the collecting itself. Accounting in my definition, then, is not professional, but accounting is what companies pay for. They pay also for professional and managerial services which, since I do not include them in accounting, I would designate as "accountancy." In summary, I am trying to make clear that accounting is not what is done by accountants. If it is menial it does not reflect on any of us. But neither does it exist to give us employment.

I started out to say what kind of thing "management accounting" is. Having settled, however arbitrarily, what accounting is I must now only indicate what part of it is "management accounting." This is my definition:

"Management accounting" is the activity—and its result—of *collecting financial information which has any usefulness other than the satisfaction of curiosity.*

As a professional person I am concerned that usefulness be recognized as the most important standard in judging what should be "generally accepted." And I do mean usefulness in terms of decision-making relevance. Financial information is *better* when it is an appropriate response to the needs of a person with a problem to solve. I am well aware that *not all accounting information can possibly be relevant to even one decision*, at least to any decision affecting someone's financial welfare. I say only that the alternative with the more useful result should have general, *and exclusive*, acceptance for reporting to the public.

This will not mean that internal and external reporting will become identical, but there will be a greater community of content.

As a teacher I feel a duty to emphasize the useful data and to distinguish between it and other results of accounting. I think all teachers have an equal responsibility to stress the specific character of the circumstances in which an item of data will be relevant. This will include debunking the most common misconceptions and misuse. Since "generally accepted accounting principles" are what they are, there is a great deal of this debunking to do.

Is it the many shortcomings of conventional accounting which prompt us to devote so much time to how the thing is

* This is an amplification of remarks made as a discussion leader at the first meeting of the Northeast Regional Group of the American Accounting Association held at Hofstra College on November 13 and 14, 1959.

done, ignoring what it does or does not mean? This, I fear, is part of the explanation. Nevertheless, it is possible to find useful accounting information, and a much more convincing case for learning about accounting can be made in terms of this usefulness. Such an approach will mention only in passing the reports which various branches of government may require. This information is not useful to the company and is collected in the interest of others. For this purpose accounting may be made to seem necessary but never valuable. When it is valuable it is being used by a manager. In formulating standards we should, more than we do, think in terms of this manager's needs. Here let me make clear, as every accounting book should make clear, that a manager is not necessarily a company executive, that is a member of "management." This manager is equally well a present or potential investor, a vendor, or a negotiator for a labor union. The important thing is that he has a problem to solve which is related to a firm's financial situation. Often the most logical means of determining periodic net profit does not produce the kind of information these managers will want. Profit determinations are historical and it is obvious that decision-makers are concerned with the future. It is no wonder that some accounting data lack the usefulness which is the only convincing justification they can have. Still there is something there for the decision-maker, and if the material is so presented that its limitations are appreciated its merits will insure that the accounting activity appears neither to be an end in itself nor a mere excrescence arising out of regulations of the Internal Revenue Service or the Securities and Exchange Commission. Alas, these latter impressions are often left by our text books and our courses. The typical student of accounting has a grandiose, but unspecific, notion of what the business gets for its data-collection dollar. He is apt to say that merely collecting data results in good financial control or that one or two figures or ratios are indicative of the overall financial health of an enterprise. We all need to combat such fairy tales by presenting accounting as one response to a decision-maker's needs, a response which is worthwhile only when the right question has been asked, relevant data are available, and the manager actually locates these data and correctly evaluates their significance.

Now I doubt if any accountant worthy of the name makes this kind of mistake in practice. He follows the existing accounting conventions and, when the occasion demands, he advises his client with due regard to non-financial considerations, the limitations of accounting data, and a careful regard for the balancing of the cost of collecting information with its potential usefulness. But when he writes about accounting theory he tends to rationalize existing practice. He argues for objectivity at the expense of the meaningful. He also organizes his thoughts around nebulous concepts and goals of secondary importance to the decision-maker. Of course such assertions need support. Consider the following:

1. As an example of rationalizing current practice consider the opposition to direct costing in much of the literature. I am well aware that there is substantial support for this method, and that the data which direct costing makes readily available can be extracted from conventional accounts, and that there is no opposition among accountants to this latter practice. However, direct costing is opposed for external reporting on the grounds that comparability with statements of other firms would be lost. This is clearly nonsense since the issue is whether or not inventory valuation ought to include direct cost only, for all firms, and not whether it is suit-

able for a few. This is a question of theory, and the direct costs are, by definition, those which are important to managers. It is true, of course, that there are rare occasions where it is valuable to have a logical allocation of fixed costs to product. Moreover, it is very important that the cost reported under non-variable overhead be controlled, but it is clear that these costs are beyond control at the time when the variable, non-variable division is made for statement purposes. Fixed costs are never controllable, though there must always have been a time when these costs were variable and were subject to modification through a decision. The point is that their control is quite unrelated to their inclusion in inventory values.

Absorption costs, which are merely conventional, are treated as though they were somehow peculiarly righteous. The customary argument in terms of better matching of cost and revenue is patently ridiculous when one realizes that even absorption costing does not match full cost of the firm's operation on the basis of the proportion of production sold. The argument that administrative and selling costs are different is precisely the point which justifies the direct cost treatment of non-variable overhead. The defender of absorption costs points to the balance sheet valuation of inventory and to the effect on the single period's reported net income. What they do not recognize is that any decision-maker interested in a company's financial information is primarily appraising that company's prospects. It therefore follows that what is most enlightening for a company's administration is also most enlightening for any very important appraisal that the outsider has to make. For inventory valuation the direct costs are clearly more relevant. For appraising operating performance it should be clear that any summary conclusion such as a net income figure is inadequate. The usefulness of an income statement for decison making purposes rests on the constituents of the net profit determination and not on their net effect. If the individual items of the statement are considered, no facts revealed by an absorption cost income statement will be disguised by a direct cost income statement. With regard to its usefulness, "inside and outside the firm," direct cost is vulnerable to attack only on grounds that the actual accounting can only approximate the theory under which variable and non-variable costs are distinguished. This objection vanishes when one realizes that any manager must concern himself with the variable costs even as he realizes that he can never identify them perfectly.

2. Surely the recording of notes and bonds at face values rather than at present values (where the two are different) is preferring objectivity to meaning. A recent study of mine revealed another example of this preference. Although the returns were only partial, I was unable to find even one public accounting firm in Massachusetts who advised their installment-selling clients to provide for uncollectible accounts on these sales or to report under the regular rule for realization of revenue. This is true despite the general recognition that there is no need for special treatment of installment sales, and that the only argument which supports exceptional treatment is the uncertainty of losses and costs of collection on this type of sale.

Surely no one would argue that book value of fixed assets has any status as useful information, but there would be a great deal of protest that any departure from a systematic amortization of cost would have a serious effect on the objective character of the net income figure. The answer to this objection lies in the following discussion.

3. Running through all of accounting theory is the nebulous concept of periodic

profit. The above mentioned concern for objectivity in income determination may be regarded as a serious misfortune. As I mentioned earlier, a manager will be interested in the specific details of income determination and not in the summary conclusions. It would probably be better if the calculation of net income were left incomplete on an income statement. With conventional depreciation a part of this determination it is most unlikely that any manager is interested in the summary figure, and the interest of each manager will be apt to lead him to choose different portions of the data in attacking his individual problem. It is interesting to note the impact of this managerial viewpoint on current operating theory. Although at first it may appear that concentrating on just those things which "show as clearly as possible what happened in that year under that year's conditions" is a managerial point of view, it soon is clear that emphasizing any resultant rather than emphasizing the necessity to examine the individual facts or other bases for the determination of that resultant is inconsistent with intelligent choice, the manager's job. The resultant does not solve the problem for those who are not equipped to deal with accounting information, and to offer the figure to an expert rightly arouses distrust.

Needless to say, the C.P.A. examinations reflect the defects which accounting theory has as a means of producing a source of useful information for those with a business problem to solve. Because of the nature of text book theory and because of the influence of the C.P.A. examinations on what is taught there is usually a need in the college curriculum in accounting for a course at an advanced level which may, and often is, called "management accounting." In discussing this area my definition of management accounting is more restricted. It refers to the type of data and the use of those data which are of special interest to a company's executives and administrators. It refers, of course, to their interest in data because of their managerial responsibilities. Consequently, financial data are considered from the standpoint of their significance rather than from the standpoint of how they are compiled. However, I am convinced that some of the latter must be included, if real understanding, especially of data limitations, is to be achieved. Nor will it neglect entirely external reporting considerations, for there is a close correspondence between the needs of other users of financial statements and those of the company management. The chief thesis which I am expounding is that, like company management, the real objective of other users of financial reports is to appraise company prospects. At least until the recommendations[1] of the American Accounting Association Committee on Management Accounting for more management orientation on the C.P.A. examination and in accounting text books have been implemented this course will have to carry a heavy burden of debunking a good many ideas about accounting data. This debunking applies to mistaken ideas which students, if they have not been taught them, have been allowed to formulate for themselves. Most students need at this point (although I have earlier argued for courses which obviate this) to have forcefully brought home that the "going-concern" is an artificial assumption quite dissimilar to the real world in which management operates. They need also to recognize that the preparation of a report does not mean either that the report will be properly interpreted (or even examined) or that anything has happened which will correct a bad situation. The importance,

---

[1] Committee on Management Accounting, "Report of Committee on Management Accounting," The Accounting Review, Vol. 34, (April, 1959), pp. 207–14.

for reporting, of a connection between responsibility and the calculation underlying quantitative information needs emphasis. This will be done by stressing relevance to and impact on what *people* are trying to accomplish, for only then do we know what and how to measure. It considers who will use the data, and it considers the relevance of the information to that person's objectives. It will ask: what information does a decision-maker really want to know in order to select a course of action? It will not merely ask what is the most logical description of financial history, and it will not be concerned about the theoretical inaccuracy of data which the manager does not need. It will emphasize that the cost of collecting data is always an important consideration in deciding what data to collect and how to collect them.

The course will do all these things because experience shows that most students will not otherwise grasp what may seem obvious. If this is conceived of as a course for those not interested in public accounting, I think the foregoing discussion will convince anyone that it is concerned with understandings which are fully as important to members of the public accounting profession as to others. It is perhaps important to add that in general the better the student has learned his "accounting theory" in earlier courses the more likely he is to need some of the insights which this course tries to impart.

In considering the nature of this course it will not be surprising, in view of its objective, to find that the case study method is the principal vehicle. Placing the considerations of technique and interpretation in a broader and more complex context adds to reality while offering the student a wider variety of experience. The nature of the student's prior preparation will determine how much of the material is new and the time available will determine how much can be covered. In concluding with a list of suitable topics I do not intend either to be exclusive or to suggest that all this could be accomplished in a single semester's work. Topics which I would suggest are readily classified, as are the activities of any manager, under the twin headings of planning and control.

Under planning one will consider period planning, which is essentially budgeting. Its company-wide impact is familiar to all. The thing to be emphasized is timing and the special characteristics which the planned level of operations gives to a standard cost figure.

I think break-even analysis is an important device which has more of planning than control implication. In its consideration I would stress the underlying assumptions which need either to be relaxed by the use of some special techniques or to be borne prominently in mind in appraising a simple break-even chart. In this connection, of course, one is particularly conscious of problems created by multiple products. This consideration is an important one in recommending the inclusion of some study of linear programming methods for settling a question of where the greatest advantage lies in situations of a complex character.

A recognition of the burden of calculating a complex linear programming solution logically suggests another important topic which I would call "the general impact of computer capability." I do not know of any industrial accounting department using computer facilities which is not much concerned with where the next generation of accountants will get their experience in purely accounting considerations which most of those presently connected with computerized accounting had before their companies acquired computers. However, it is not this, nor is it the familiarity with the computer programming or operation which I feel is important. I believe the important considera-

tions in this area are the special data needs of the computer, the need for integration of data collection of all kinds where computers are employed, and the contributions that the general capabilities of computers will make to planning. In this latter category I think not many of us realize that computers are likely to make possible a kind of research called "simulation" which will enable managements to plan with greater confidence and to try out innumerable plans in a simulated, but valid, environment which will permit them to choose in advance the plan which offers the most attractive outcome.

It will also be possible to explore the rationale and the data needs for various kinds of project planning. This is not only an area where the accountant must make substantial contributions, but is an important means of producing the added reality which the accounting student so often needs.

In addition to the general controllership function there are a few other control-related topics which I feel are especially important. Direct costing is an important one of these topics. It should be made clear why it is theoretically superior to absorption costing, and it should be made clear that the theory can be only approximated in fact. It will then be clear that the choice which management makes depends upon its confidence in the reliability of the necessarily approximate direct cost data which its system makes available. The student should also grasp clearly the kind of mistakes which management will make if it treats as valid direct cost data which have a substantial mixture of non-variable cost included in them.

From the conventional cost accounting area some time may well be devoted to the limitations of unit costs for control or pricing purposes. That a unit cost is absolutely unique for any level of output which has been assumed to be normal or standard (because of the fixed cost element) the students will know, but until they have had some experience in breaking out the relevant cost from this composite they will draw inappropriate conclusions.

Not nearly enough recognition has been given the advantages of statistical sampling methods as a means of producing data economically, and, perhaps equally important, with a descriptive measure of the approximateness of the information. In business practice a sound beginning has been made in this area. It is, however, only the beginning, and it is an important area for accountants to take the lead. They should, for instance, be investigating the possibility of substituting a sampling procedure for the elaborate conventional cost-determining system. Where real advantages lie in these procedures they will be developed. If non-accountants are responsible for the development they will secure as a windfall the present domain of the accountants in the area of quantitative information.

No concern for control will omit the technique and objectives of "responsibility accounting." The connection is so obvious as to acquire no further elaboration.

It is indeed a proper reaction to inquire, "but are these things not taught in other accounting classes?" The answer is in many cases, yes, but their subordination to techniques, to "generally accepted accounting principles," and to the production of rather precisely specified "solutions," has inhibited students' appraisal of accounting information in a way that is worthy of respect and remedy.

### SUMMARY

Accounting is a means of making certain quantitative information available. When it is obligatory, as in tax reporting, there are rules to follow and no theory need justify them. (Some rules are formulated only after specific returns have been filed.)

The area where theory and professional training are relevant is that where a decision-maker is (or would be) motivated to incur the collection costs of accounting because he expects to make a decision which will be more rewarding because the data were known than would the saving of the collection costs have been. The many parties (all of whom are managers) who need this kind of data are mainly trying to determine what company management seeks to know—company prospects under various (or a single) future conditions.

Historical data are often irrelevant, and logical historical income determination often disguises relevant portions of the data. Accounting theory should pay more attention to users' objectives, even at the sacrifice of some objectivity.

All accounting courses should stress usefulness by pointing out shortcomings of certain data as well as by pointing out the precise conditions where useful data are relevant. At present there is need for a course with this practical emphasis in which the principal attention will be on the relations of data to decisions and on means of analyzing and augmenting routine data for limited internal purposes.

# REPORT OF THE ANNUAL CONVENTION

PAUL H. WALGENBACH
*Secretary-Treasurer*

THE 1960 annual meeting of the American Accounting Association was held August 29, 30, and 31 on the campus of The Ohio State University, Columbus, Ohio. It was one of the largest and most successful conventions of the Association.

Highlights of the ladies' program included a luncheon followed by a lecture on fabrics by a home economist, a tour of a shoe factory, and a tour of the Lazarus Department Store.

Activities of the children included a trip to the zoo, a tour of a weather station, and a tour to Holiday Hill.

At the Plenary sessions on Tuesday and Wednesday, the following speakers discussed the topics indicated: H. G. Nelson, Ford Motor Company, William W. Werntz, Touche, Ross, Bailey & Smart, and Leo A. Schmidt, University of Michigan, spoke on "The Validity and Impact of the Ford and Carnegie Reports on Business and Accounting Education"; Andrew Barr, Securities and Exchange Commission, Walter McFarland, National Association of Accountants, Weldon Powell, Haskins & Sells, W. Joseph Littlefield, Controllers Institute of America, and Raymond Dein, University of Nebraska spoke on "Accounting Research"; Kenneth Tiffany, The Burroughs Corporation, Herman Bevis, Price, Waterhouse & Co., and Harvey Meyer, University of Tennessee, spoke on "The Future of Accounting"; John A. Beckett, Assistant Director of the Budget, spoke on "The Federal Budget."

The following subjects were discussed at the round tables held on Tuesday and Wednesday: "The Ford and Carnegie Reports," "Accounting Research," "Scope and Content of the Fifth Year of Collegiate Education for Accounting," "Recent Developments in Income Tax Legislation and Education," "Integration of Managerial Accounting into Traditional Accounting Courses," "Television and Accounting Instruction," "Mathematics and Accounting Instruction," "C.P.A. Regulations and Accounting Curricula," "Professional Development of Accounting Personnel in Government Service," "Scope and Content of First Course in Cost Accounting," "Accounting Developments Abroad."

The Association was very grateful to receive, at the Tuesday luncheon, a contribution to the Fellowship Fund of $5,000, from Alexander Grant & Company. The check was presented by Mr. John P. Goedert, one of the Executives of the firm, to President Charles Gaa. The main speaker at this luncheon was Mr. J. S. Seidman, President of the American Institute of Certified Public Accountants, who gave a stimulating talk on "How the Schools of Business and the C.P.A. Can Help One Another."

At the luncheon and business meeting on Wednesday, President Charles J. Gaa presiding, brief reports were given by the Editor regarding THE ACCOUNTING REVIEW, by the Secretary-Treasurer regarding finances and membership statistics, and by the Director of Research, the Chairman of the Accounting Careers Committee, and the Chairman of the Membership Committee concerning the Association's activities in these areas. Past-President Martin L. Black, Jr.,

voiced the Association's gratitude for the excellent work and devotion of R. Carson Cox, retiring Secretary-Treasurer, which was heartily applauded by the members. Professor Cox has accepted a position as Personnel Director with Alexander Grant & Company, C.P.A.s.

President Gaa reviewed his activities during the year, summarized the work of the Association Committees, and expressed the Association's thanks to the members of Beta Alpha Psi Accounting Fraternity for their contribution of $1,000 to the Fellowship Fund. The check was presented to President Gaa by Professor Nolan Williams, President of the Grand Council of Beta Alpha Psi.

The report of the Committee on Nominations (C. R. Niswonger, Martin L. Black, Jr., C. A. Moyer, Howard S. Noble, Herbert F. Taggert) was presented by Chairman Niswonger:

For President:
  A. B. Carson, University of California at Los Angeles
For President-Elect:
  Raymond Dein, University of Nebraska
For Vice Presidents:
  Charles W. Bastable, Columbia University
  Norton M. Bedford, University of Illinois
  Donald J. Bevis, Touche, Ross, Bailey & Smart
  Frank Kaulback, Jr., University of Virginia
For Secretary-Treasurer:
  Paul H. Walgenbach, University of Wisconsin (Also appointed for the term September 1–December 31, 1960)
For Editor:
  Robert K. Mautz, University of Illinois
For Director of Research:
  Samuel R. Hepworth, University of Michigan

A motion was made from the floor, seconded and carried accepting the report of the Committee on Nominations and instructing the Secretary-Treasurer to cast a unanimous ballot for election of the above named persons.

At the banquet session on Wednesday evening President Gaa introduced the members of the Committee on Convention Arrangements, the Ladies' Program Committee, the persons seated at the speakers' table, and the 1961 slate of officers, including President-Elect A. B. Carson, who made a brief acceptance speech. The banquet session closed with a superb musical program by a group of young and versatile musicians, followed by a dance for members and guests.

We would like to express our sincere appreciation to the Committee on Arrangements and the Ladies' Program Committee for their outstanding work in arranging the many details of the convention, and to the Bureau of Business Research for the extremely efficient handling of reservations. The Association is especially indebted to the committee members listed below:

Mr. and Mrs. William B. Jencks
Mr. and Mrs. Dallas S. Bolon
Mr. and Mrs. Gerald C. Brown
Mr. and Mrs. Lauren F. Brush
Mr. and Mrs. James Bulloch
Mr. and Mrs. Walter C. Burnham
Mr. and Mrs. R. Carson Cox
Mr. and Mrs. W. E. Dickerson
Mr. Horace W. Domigan
Mr. and Mrs. George W. Eckelberry
Mr. and Mrs. Paul E. Fertig
Mrs. W. J. Gleig
Miss Agnes Gordon
Mr. and Mrs. Clayton R. Grimstad
Mr. and Mrs. J. B. Heckert
Mr. and Mrs. Harry C. Lyle
Mr. and Mrs. Elzy McCollough
Mr. and Mrs. Charles F. Nagy
Mr. and Mrs. Robert D. Neubig
Mr. and Mrs. Richard V. Northrup
Mr. and Mrs. William J. Serraino
Mr. and Mrs. Daniel M. Shonting
Mr. and Mrs. William M. Slocum
Mrs. R. S. Wilcox

# THE TEACHERS' CLINIC

GLEN G. YANKEE

EDITOR'S NOTE: This section of THE ACCOUNTING REVIEW is devoted to matters of particular interest to accounting instructors. The contribution of articles bearing on the nature and purpose of various types of accounting education, or dealing with techniques of accounting instruction, is invited. Address all correspondence to Glen G. Yankee, School of Business Administration, Miami University, Oxford, Ohio.

## WHAT HAPPENS TO ACCOUNTING MAJORS?[1]

MERRILL B. DILLEY
*Drake University*

### THE SURVEY

A recent review of accounting literature discloses little, if any, information with respect to job titles, salaries, and geographical location of all the accounting graduates of a single university. As a means of evaluating current curricula and course content, as well as indicating significant employment trends, a study in depth was recently completed of all of the living accounting graduates of Drake University. The study was financed by grants from American Steel Foundries Company, Arthur Andersen & Company, and Ernst & Ernst.

This paper summarizes the information provided by the 95% of the living accounting graduates of Drake University who responded to a written questionnaire during the winter of 1959–60. Students majoring in subjects other than accounting were not included in this study. Because of the exceptionally high percentage of responses, probably due in part to the fact that the writer is personally acquainted with virtually all accounting graduates since the first class graduated in 1921, it is felt that the results summarized below are a true representation of all accounting graduates of Drake University.

Of the 602 graduates in accounting since 1921, it was possible to locate or account for all but eight. Thirty graduates are known to be deceased and twenty others did not respond to the questionnaire although they received one. The following summary covers the 544 graduates from whom completed questionnaires were received.

### RESULTS OF THE SURVEY

This survey resulted in considerable data on occupation by function, job titles, geographical location, and income of accounting graduates.

### *A. Occupation by Function*

Approximately sixty-two per cent of all accounting graduates over this 38 year span are currently engaged in accounting work of some type. An additional twenty-six per cent are in some phase of management, including many who are doing accounting work at that level. The next largest group, totaling six per cent is engaged in sales or sales management. The remaining six per cent of the graduates are in other occupations. The specific type of work in each of the above categories is indicated below:

*Occupation by Function*

| *Accounting* | *Number* | *Per cent* |
|---|---|---|
| Partner C.P.A. firm | 29 | 5 |
| Public Accounting (not partner) | 110 | 20 |
| Controller | 42 | 8 |
| Cost Accountant | 32 | 6 |
| Accountant (other than above) | 99 | 18 |
| Internal Revenue Agent | 23 | 4 |
| Special Agent, Accountant, F. B. I. | 5 | 1 |
| Sub-Total | 340 | 62 |

| | Number | Per cent |
|---|---|---|
| *Management* | | |
| Company President | 9 | 2 |
| Company Vice President | 35 | 6 |
| Company Manager, General | 63 | 12 |
| Owner of Business | 32 | 6 |
| Manager, Personnel | 2 | — |
| | 141 | 26 |
| *Sales* | 33 | 6 |
| *All Others* | | |
| University Professor | 11 | 2 |
| Lawyer | 6 | 1 |
| Graduate Student | 6 | 1 |
| Housewife | 3 | 1 |
| Veterinarian | 1 | |
| Engineer | 1 | 1 |
| Economist | 1 | |
| Unemployed | 1 | |
| Sub-total | 30 | 6 |
| Grand Total | 544 | 100 |

## *B. Occupation by Job Title*

A different breakdown by occupation shows thirty-four per cent in professional work, thirty-four per cent in management, twenty-four per cent in other accounting jobs, and eight per cent in miscellaneous jobs. The detail of this classification is as follows:

*Occupation by Job Title*

| | Number | Per cent |
|---|---|---|
| *Professions* | | |
| Certified Public Accountant (Partner) | 29 | 5 |
| Certified Public Accountant (not Partner) | 110 | 20 |
| Special Agent, Accountant, F. B. I. | 5 | 1 |
| Internal Revenue Agent | 23 | 4 |
| University Professor | 11 | 2 |
| Lawyer | 6 | 1 |
| Engineer | 1 | |
| Veterinarian | 1 | 1 |
| Economist | 1 | |
| Sub-total | 187 | 34 |
| *Management* | | |
| Company President | 9 | 2 |
| Company Vice President | 35 | 6 |
| Company Controller | 42 | 8 |
| Company Manager (General) | 63 | 12 |
| Owners of Business | 32 | 6 |
| Manager, Personnel | 2 | — |
| Sub-total | 183 | 34 |
| *Accountants—Other (Primarily Industrial)* | 131 | 24 |
| *All Other:* | | |
| Sales (Some of these are Management) | 33 | 6 |
| Graduate Student | 6 | 1 |
| Housewife | 3 | 1 |
| Unemployed | 1 | — |
| Sub-total | 43 | 8 |
| Grand Total | 544 | 100 |

The number of graduates holding C.P.A. certificates is 144. Although most of these are among the 139 individuals currently engaged in public accounting, some are also engaged in company management or in industrial accounting.

## *C. Geographical location of Accounting Graduates*

The 544 accounting graduates of Drake University covered are almost equally divided between those living in Iowa (270) and those living outside the state (274). As indicated below, slightly over two-thirds of those remaining in Iowa also remained in Polk County, including Des Moines.

| *Location* | *Number* |
|---|---|
| Polk County, including Des Moines | 190 |
| Iowa, other than Polk County | 80 |
| U. S. A., other than Iowa | 260 |
| Foreign Countries | 8 |
| Not Classified (Armed Services) | 6 |
| Total | 544 |

## *D. Income of Accounting Graduates*

Income statistics were reported for over 90% of the 544 graduates covered. Although statistics were compiled for each graduating class, only the classes of 1929, 1939, 1949, and 1959 are presented here.

Analysis of income data for all graduating classes would seem to indicate that accounting graduates employed in public accounting receive considerably greater income on the average both ten years and twenty years after graduation than those in other types of jobs. However, the relative number of graduates earning in ex-

*Annual Income of Accounting Graduates*
*(Thousands of Dollars)*

| Year of Graduation | Public Accounting: Arithmetical Average | Public Accounting: Median | Public Accounting: Range | All Other Accounting Majors: Arithmetical Average | All Other Accounting Majors: Median | All Other Accounting Majors: Range |
|---|---|---|---|---|---|---|
| 1929 | none | none | none | $25.9 | $25.0 | $11.0–40.0 |
| 1939 | $27.3 | $25.0 | $17.5–40.0 | 18.3 | 25.0 | 7.0–25.0 |
| 1949 | 16.9 | 15.0 | 11.0–25.0 | 11.3 | 10.0 | 7.0–25.0 |
| 1959 | 5.0 | 5.0 | | 5.6 | 5.0 | 4.0– 9.0 |

cess of $50,000.00 per year was somewhat higher for those in industry as compared with public accounting.

*E. Location, Occupation, and Beginning Salaries of Very Recent Graduates*

Data for accounting graduates during the last four years are presented in the adjoining column.

CONCLUSION

Although a number of significant facts were disclosed by this survey, similar data about graduates of other universities would make possible a number of comparative analyses. It is hoped that the results of this survey are of enough interest to motivate other schools to conduct similar studies of the same type..

| | Year of Graduation 1957 | 1958 | 1959 | 1960 | Total |
|---|---|---|---|---|---|
| *Geographical Location* | | | | | |
| Iowa | 17 | 18 | 12 | 12 | 59 |
| Outside Iowa | 19 | 16 | 15 | 22 | 72 |
| Total Graduates | 36 | 34 | 27 | 34 | 131 |
| *Occupation* | | | | | |
| Public Accounting | 13 | 22 | 10 | 16 | 61 |
| Industrial Accounting | 16 | 6 | 11 | 10 | 43 |
| Government Accounting | 6 | 4 | 2 | 3 | 15 |
| Teaching | 1 | 0 | 0 | 0 | 1 |
| Law School | 0 | 2 | 2 | 1 | 5 |
| Armed Services | 0 | 0 | 2 | 4 | 6 |
| Total Graduates | 36 | 34 | 27 | 34 | 131 |
| Beginning Salary Average | $403 | $425 | $431 | $462 | |

## DETERMINING PRIORITIES FOR CASH DISTRIBUTION IN PARTNERSHIP LIQUIDATION

Joseph Peter Simini
*University of San Francisco*

Students in the Principles of Accounting course are introduced in partnership liquidation to the problem of cash distribution using a situation in which all assets are sold at once, liabilities are liquidated, and cash is distributed to the partners. Priority order has no importance—but it points out, and the instructor should emphasize, that payment of cash on the basis of the capital account balances is now equitable because gains and losses have been distributed according to the partnership profit and loss sharing ratio.

Almost immediately the question is presented (and the instructor should extract it from the class) as to what would happen if the partnership were not liquidated at one time. Here the instructor must talk of priorities. As pointed out by A. Theodore Mueller,[1] most widely-used

[1] A. Theodore Mueller, "The Ratio and Proportion Method of Preparing a Program of Priorities for Cash Distribution in Partnership Liquidations," The Accounting Review, Vol. XXXIII, No. 3, July 1955, p. 469–472.

currently-published accounting texts do not use a ratio and proportion method of determining priority order. His article continues with a demonstration of a proposed plan. In this plan Mr. Mueller divides the capital account balances by the profit and loss-sharing ratio and generates a "loss absorption ability." Explaining this loss absorption ability to the students seems to the author to be a negative approach to the problem of discussing cash distributions.

The author has developed another method which compares percentage of capital to the profit and loss-sharing ratio. Assume a partnership with four capital accounts and profit and loss-sharing ratios as follows:

| | | |
|---|---|---|
| A | $20,000 | 10% |
| B | $15,000 | 20% |
| C | $25,000 | 30% |
| D | $60,000 | 40% |

By inspection it can be seen that the capital balances are not in the same ratio as the profit and loss-sharing ratios.

From the data above a table may be prepared as follows:

| | *A* | *B* | *C* | *D* | *Total* |
|---|---|---|---|---|---|
| 1. Profit and Loss-sharing Ratio | 10% | 20% | 30% | 40% | 100% |
| 2. Partners' Capital Account Balances | $20,000 | $15,000 | $25,000 | $60,000 | $120,000 |
| 3. Capital Account Balance Ratios | 16.7% | 12.5% | 20.8% | 50.0% | 100% |
| 4. Percentage of Line 3÷Line 1 | 167.0% | 62.5% | 69.3% | 125.0% | — |
| 5. Priority Order | 1 | 4 | 3 | 2 | — |

The capital account balance ratios (line 3) are developed because the standard text-books mention distribution on the basis of the profit and loss-sharing ratio when the capital accounts are in the profit and loss-sharing ratio. Although it could be seen by inspection that the captial account balances are not in the profit and loss-sharing ratio the computation shows us what the capital account balance ratios are.

The next step is to compare the capital account balance ratios and the profit and loss-sharing ratios to determine the relative differences between them (line 4). It can now be shown that A and D have more capital than their profit and loss-sharing ratio would require and that B and C have less. The order of priority is established by paying first the partner who has the greatest excess and continuing down to the one who has the greatest deficiency (A, D, C, and B).

The solution to the problem continues by developing a distribution program as tabulated at the bottom of this page.

A distribution must be made to A in order that A's excess capital be returned before distribution to the other partners.

| | *A* | *D* | *C* | *B* |
|---|---|---|---|---|
| 1. Profit and Loss-sharing Ratio | 10% | 40% | 30% | 20% |
| 2. Partners' Capital Account Balances | $20,000 | $60,000 | $25,000 | $15,000 |
| 3. Distribution to A | 5,000 | | | |
| 4. A's and D's Capital Account Balances in Profit and Loss-sharing Ratio | $15,000 | $60,000 | | |
| 5. Distribution to A and D | 6,667 | 26,667 | | |
| 6. A's, D's and C's Capital Account Balances in Profit and Loss-sharing Ratio | $ 8,333 | $33,333 | $25,000 | |
| 7. Distribution to A, D, and C | 833 | 3,333 | 2,500 | |
| 8. All Capital Account Balances in Profit and Loss-sharing Ratio | $ 7,500 | $30,000 | $22,500 | $15,000 |

A's capital account balance is to be compared to D's who has the next highest excess capital. Using the formula set forth by Mueller the amount of A's capital balance is determined:

A:10::$60,000:40
or A=$15,000

Therefore, $5,000 is to be distributed to A in order that his capital account balance be reduced to $15,000. Comparing A and D to C we get:

A:10::D:40::$25,000:30
or A=$8,333 and D=$33,333

Therefore, $6,667 is to be distributed to A and $26,667 to D in order that their capital account balances be reduced sufficiently to bring A's, D's, and C's capital account balances into the profit and loss-sharing ratio. Comparing A, D, and C to B we get:

A:10::D:40::C:30::$15,000:20
or A=$7,500; D=$30,000; and C=$22,500

When $833 is distributed to A, $3,333 to D, and $2,500 to C, the capital account balances of all the partners will be in the profit and loss-sharing ratio and further distributions can be made in that ratio.

The author has found that this problem lends itself to slide rule as well as machine solution. The student can use the laboratory equipment for the solution of this problem.

## AN ACCOUNTING COURSE FOR MAJORS AND NON-MAJORS

Eugene Rosenfeld

and

Ralph G. Ledley

*Queens College*

The standard elementary accounting text is designed to suit the needs of accounting majors only. Such a text necessarily contains much technical material and is designed for two 3-credit courses covering one academic year. Hence at institutions where only a standard course is offered, many students with a less than professional interest in accounting are probably discouraged from taking any accounting courses. The college authorities will in very few cases grant credit for one semester which is really only half a complete course and is not a unit in itself.

If the student does not desire the technical material but wants a survey and a consumer's view of accounting only, he may, at some colleges, take courses built on certain special one-semester texts. Such courses are terminal and do not lead to a second semester of accounting. The result is after one semester's exposure to accounting the student decides that the first taste calls for further and larger bites, he must start again from the beginning. Furthermore, the luxury of offering both a standard one year elementary accounting course as well as a one semester course for non-accountants is probably something which most colleges and universities cannot afford. There are not likely to be enough students to warrant offering both types of courses. The college thus offers the full year course in order that those students who wish to go ahead may have an adequate background on which to build. The

group that desires to continue may be numerically smaller than the other, but they are the more vitally interested in this material. A student of such a college who really wants merely an introduction to accounting and business practice must, therefore, ordinarily take a full year course. This problem points up the need for a one-year course, the first semester of which will serve as a survey course for the non-accountants as well as an introductory course for the accounting major.

The standard text starts with the assumption that the student has no knowledge of accounting and very little knowledge of business practice. It takes him through as much theoretical and practical material as can be fitted into that period of time, theory and practice being blended or alternated. Neither can be properly studied without the other.

At the end of a year with such a text, the student is well equipped to go on to more advanced studies in accounting or to work with confidence in a bookkeeping office or even to assist in an accounting office. He will have been introduced to statements; ledgers, general and subsidiary; journals, general, special and analytical; work-sheets; adjusting entries and many other technical matters. These are all needed by the student who intends to go further in accounting. The non-accountant, on the other hand, has little, if any, need for this technical information. He should acquire as much familiarity with accounting techniques as the student who takes the survey course in, let us say, Chemistry, would have of Chemistry. He has learned (or at least should have learned) the basic philosophies of the accounting profession, something of business practice, and a little more.

"A little more" is a consumer's knowledge of accounting. Even if he does not enter the field of accounting (and we suspect that most first term accounting students in the average liberal arts college do not), he will be a consumer of accounting information. In this connection he should have learned enough about what our various books of account contain to be able to derive considerable information from them. He should know enough about balance sheets, income statements, statements of surplus, and the like to be able to understand them or at least understand enough to ask intelligent questions about them when he is confused. He should know the basic premises with respect to valuation and the accounting principles and conventions which underlie all these records. He should know what he can expect from his accountant and what he cannot.

Several years ago, after a good deal of thought, the faculty at Queens College revised the order of material generally contained in the first year text. The purpose was to give the student, by the end of one semester, a fairly complete survey of accounting while omitting much of the technical material. It is hoped that he is ready to be a consumer of accounting information, able to request appropriate accounting data, to understand how it is derived, and to use it when supplied. If, on the other hand, he wishes to continue with accounting in his second semester he takes the balance of the technical material in the standard text, so that at the end of the first year he is ready to continue with the usual advanced courses.

The writers and their colleagues have given much thought to appropriate outlines for such a course. However, due to the limitations imposed by the need to use one of the texts presently available, the following outlines are used. They approximate what it is felt such a course should cover, and are based on the use of standard texts.*

* *Fundamental Accounting*, Tunick & Saxe, Second Edition, copyright 1956 by Prentice-Hall, Inc.

*OUTLINE FOR FIRST SEMESTER*

1. Introduction to accounting and business.
2. The fundamental equation.
3. The form and content of the balance sheet (brief).
4. The form and content of the income statement (brief).
5. Accounts and the ledger; including
   (a) The rules for debit and credit.
   (b) Columnar (analytical) accounts (brief).
   (c) Other special forms of accounts (brief).
6. The role of the journal: posting to the ledger.
7. The trial balance, the simple work sheet, and closing the books.
8. The accounting distinction between non-merchandising business (used in illustrations to this point), and merchandising business, including discussion of the merchandise accounts.
9. Review summary problem, including journalizing, posting, work sheet, financial statements, closing entries, and post closing trial balance for a merchandising business.
10. The concept of controlling accounts and subsidiary ledgers.
    (a) Including further reference to analytical accounts.
11. The concept of special journals, including those providing for the use of controlling accounts and subsidiary ledgers.
12. An introduction to negotiable instruments including:
    (a) Types and forms of negotiable instruments.
    (b) The law of negotiable instruments (briefly).
    (c) Interest computations.
    (d) Contingent liability concept on discounts, endorsements, etc.
    (e) Simple accounting entries for negotiable instruments.
13. Introduction to taxation:
    (a) Payroll taxes, including discussion of subject employers, reporting, rates, payments, etc., also including workmen's compensation insurance and disability benefit requirements.
    (b) Sales and excise taxes (briefly).
    (c) Other taxes (briefly).
14. The record of cash:
    (a) Checking account procedures.
    (b) Bank account reconciliations.
    (c) The concept of the petty cash fund.
15. Adjusting entries:
    (a) The need for adjustments.
    (b) Adjustments for ending inventories (review), accruals, deferrals, depreciation, bad debts, etc.
16. An introduction to the expanded work sheet (incorporating columns for adjusting entries); other uses of the work sheet.
17. Classified financial statements (briefly).
18. An introduction to partnerships:
    (a) The law of partnerships (briefly).
    (b) The partnership agreement.
    (c) The concept of multiple capital and drawing accounts.
19. The corporate form of organization:
    (a) Corporation vs. partnership.
    (b) The corporate entity; also stockholder-director-officer liability.
    (c) Classification and function of stocks and bonds.
    (d) The concept of legal capital vs. surplus.
20. Accounting as an aid to management (briefly):
    (a) Budgets.
    (b) Break even computations.
    (c) Source and application of funds.
    (d) Financial statement analysis.
    (e) Insurance requirements and computations.
21. Concept of internal control—introduction to business papers and procedures.

*OUTLINE FOR SECOND SEMESTER*

1. Accounting for petty cash:
   (a) The imprest system.
   (b) The petty cash journal vs the petty cash memorandum record.
2. The accountants' work sheet and classified financial statements (detailed).
3. Accounting for negotiable instruments.
4. The expanded purchase journal and the voucher system.
5. Practice set (Complete cycle of records and transactions for an individual including work sheet, adjusting and closing the books, financial statements, and preparation of records for entry of next period's transactions).
6. Partnership accounting:
   (a) Admission of a partner.
   (b) Apportionment of net income.
   (c) Partner's loans.
   (d) Dissolution of partnerships.
   (e) Special partnership problems.
7. Corporation accounting:
   (a) Capital stock.
   (b) Surplus.
   (c) Corporate bonds.

8. Accounting for the sale of a business (including the conversion of a partnership to a corporation).
9. Manufacturing accounting:
   (a) Accounting entries.
   (b) The manufacturing work sheet.
   (c) Financial statements for a manufacturer.
   (d) Introduction to cost accounting.
10. Practice set (Complete cycle of records and transactions for a manufacturing corporation including work sheet, adjusting and closing the books, financial statements, and preparation of records for entry of next period's transactions).
11. To extent time permits:
    (a) Private ledger.
    (b) Branch accounts and consolidations.
    (c) Fiduciaries' records.
    (e) Etc.
12. An integrated summary of accounting theory.

Note: It should be noted that a good part of the material covered in the second semester is discussed briefly in the first semester, with the sole purpose of giving the student an introduction to some of these concepts. The material of the second semester is covered more thoroughly and a good many more problems are solved by the students.

It has come to the authors' attention that at least one other college in Metropolitan New York uses the same approach as Queens College although with a somewhat different outline. The authors would be most interested in hearing from people at other colleges who are either operating under the same philosophy or would be interested in doing so if a proper text were available. If there are enough such colleges, perhaps some author might be sufficiently interested to write an appropriate text and perhaps some publisher would be sufficiently interested to publish it. The writers think that many colleges would use such a book which might well be published in a half year edition as well as in a full year edition. Colleges offering such a course should find increased student interest in accounting as an elective course. The possibility of surveying the field in one semester should be attractive to all who wish some understanding of the significance of accounting in our complex economic society.

# THE DIRECT METHOD OF PREPARING CONSOLIDATED STATEMENTS*

DAVID GREEN, JR.
*University of Chicago*

The subject area of "Consolidations" offers itself as a most suitable workshop for testing many of the notions of accounting. To prepare the necessary financial statements correctly requires satisfactory answers to many relevant accounting questions such as: what are revenues? costs? expenses? assets? equities? Since these questions are related to an abstract (super corporate) entity, continuous reliance on basic premises is necessary. Yet the usual textbook solution involves so much busy work that the student has little remaining time or energy to benefit from theoretical inquiry. Indeed, the drudgery involved in the initial preparation of the worksheet (which usually requires the copying of the several trial balances) may be sufficient to divert intellectual attention!

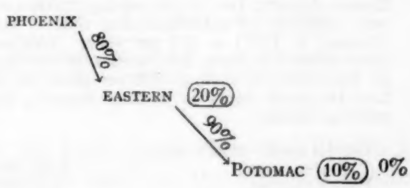
Another obstacle to the learner is found in the multi-chapter approach to the subject found in many textbooks. With this approach, the student works largely with small discrete parts of the whole. Ordinarily this might be desirable; here, however, his attention is best directed to the whole problem since the answers to the parts are relevant only in the context of the whole. It is usually true that by the time a student undertakes the study of consolidations, he has an extensive and thorough background in accounting methodology and theory. To the extent that this is true, he could be confronted with the whole problem of consolidations at the outset. To facilitate this frontal attack, the student must be armed with a pattern of problem solving technique. Ideally the pattern should be such as to insure that (1) all pertinent aspects of the problem will be examined, (2) each issue raised can be resolved through accounting analysis rather than rote, (3) "false-starts" and wasted effort will be reduced or eliminated completely, and (4) the end goal (usually the preparation of statements) will be achieved without extensive recopying.

It is believed that the pattern illustrated below satisfies these requirements. The first illustration is based on a problem of average (?) difficulty which appeared in the May, 1941, C.P.A. Examination. A second illustration poses a more involved situation.

### *Illustration I*

The statement of the facts of the problem appears in Step 3.

Step 1. *Prepare a diagram of ownership.* From the data in the problem, a diagram is easily prepared. This facilitates subsequent reference and is a useful, but not vital, tool. The minority interest is indicated beside the subsidiary company in which it exists.




* The method described has evolved over many years at the Graduate School of Business, The University of Chicago. Professors W. J. Vatter (now at the University of California) and Kullervo Louhi (now at Michigan State University) contributed greatly to the method. Professor Maurice Moonitz has helped this writer with his valuable comments on an earlier draft.

Step 2. *Prepare an "Analysis of Acquisitions."* This will become a formal schedule to support the solution.

The usefulness of separating the various elements of ownership, especially retained earnings, is shown later. The information contained in the schedule above is adequate for preparing the elimination entries for investments, but their preparation is not required in this procedure.

*SCHEDULE I*

*PHOENIX COMPANY AND SUBSIDIARIES-ANALYSIS OF INVESTMENTS COMPARING COSTS TO BOOK VALUES ACQUIRED AS AT VARIOUS DATES OF ACQUISITION*

| *Description & Date* | *1. Cost* | *2. Book Values at Acquisition Date* | | *3. % Acquired* | *4. Book Values Acquired* | *Excess of Cost over Book Value* |
|---|---|---|---|---|---|---|
| Phoenix in Eastern: 1-1-37 | $210,000 | Cap. Stk. | 150,000 | 70% | $105,000 | |
| | | Prem. on Cap. Stk. | 150,000 | | 105,000 | 0 |
| | | | | | $210,000 | |
| Phoenix in Eastern: 12-31-38 | $ 60,000 | Cap. Stk. | 150,000 | 10% | $ 15,000 | |
| | | Prem. on Cap. Stk. | 150,000 | | 15,000 | |
| | | Retained Earnings | 100,000 | | 10,000 | $20,000 |
| | | | | | $ 40,000 | |
| Eastern in Potomac: 12-31-38 | $180,000 | Cap. Stk. | 200,000 | 90% | $180,000 | |
| | | Deficit | (14,000) | | (12,600) | 12,600 |
| | | Excess of Cost over Book Value Acquired: | | | | $32,600 |

Step 3. *Utilize the statement of the problem to eliminate the obvious intercompany transactions such as receivables and payables, revenues and expenses, etc.* These eliminations are referred to later as the group 1 eliminations. Add the remaining balances horizontally and place the totals in the margin when space is available.

PROBLEM DATA TO ACCOMPANY TRIAL BALANCE

(1) Phoenix Co. owns 36,000 shares of the stock of Eastern Airports, Inc. Of this holding 21,000 shares were acquired by subscription at time of issue (January 1, 1937) at $10 per share. Additional 3,000 shares of Eastern, Inc., stock were purchased on December 31, 1938, at $20 per share; at this time the stock equity of Eastern Airports, Inc., stood as follows:

| | |
|---|---|
| Capital stock—stated value ($5 per share) | $150,000 |
| Paid-in surplus | 150,000 |
| Earned surplus | 100,000 |
| | $400,000 |

As of January 1, 1939, Eastern Airports, Inc., declared a stock dividend of $75,000 (15,000 shares at $5.00 per share) which was appropriated from earned surplus.

(2) Eastern Airports, Inc., owns 90 per cent of the common stock of Potomac Airport Co. acquired on December 31, 1938, at a total cost of $180,000. At this time the accumulated operating deficit of Potomac was $14,000 but preferred dividends had been paid to date.

(3) No dividends were paid by Phoenix Co. in 1940.

(4) No dividends (other than the stock dividend referred to above) were declared by Eastern Airports, Inc., during the years 1939 and 1940.

(5) No dividends were declared on the preferred stock of Potomac Airport Co. for the two years, 1939-1940. This is a 6 per cent cumulative stock.

(6) The interest charge on the books of Eastern Airports, Inc., is entirely applicable to the advances made by the Phoenix Co.

(7) All of the revenues of Potomac Airport Co. for 1940 are based on charges to Eastern Airports, Inc., not yet collected.

(8) All investment accounts shown are recorded on a cost basis, with no adjustments for intercompany profit, loss, or dividends.

| | *Phoenix Co.* | *Eastern Airports Inc.* | *Potomac Airport Co.* | | |
|---|---|---|---|---|---|
| **BALANCE-SHEETS DECEMBER 31, 1940** | | | | | |
| *Assets* | | | | | |
| Cash | $ 428,000 | $ 14,500 | $ 500 | $ 443,000 | |
| Accounts receivable | | 45,000 | (8,500) | 45,000 | |
| Prepayments and supplies | 5,000 | 26,500 | | 31,500 | |
| Investment in U S. Airlines Co. stock | 630,000 | | | 630,000 | |
| Investment in Eastern Inc. stock | ~~270,000~~ | | | | |
| Loans to Eastern, Inc. | (370,000) | | | | |
| Investment in Potomac Co. common stock | | ~~180,000~~ | | | |
| Land | | 284,000 | 215,500 | 499,500 | |
| Buildings and equipment | | 310,000 | | 310,000 | |
| Reserve for depreciation | | 50,000 | | 50,000* | |
| | | | | 32,600 | Goodwill-Sched. 1 |
| | $1,703,000 | $810,000 | $224,500 | $1,941,600 | |
| *Liabilities* | | | | | |
| Accounts payable | $ | $ 10,000 | $ | $ 10,000 | |
| Taxes and other accruals | 15,000 | 24,000 | | 39,000 | |
| Due Phoenix Co. | | (370,000) | | 141,136 | Minority-Sched. 2 |
| Due Potomac Co. | | (8,500) | | | |
| Capital stock—preferred | | | ~~40,000~~ | | |
| Capital stock—common | 500,000 | ~~225,000~~ | ~~200,000~~ | 500,000 | |
| Paid-in surplus | 500,000 | ~~150,000~~ | | 500,000 | |
| Earned surplus | 688,000 | ~~22,500~~ | ~~15,500*~~ | 751,464 | Schedule 2 |
| | $1,703,000 | $810,000 | $224,500 | $1,941,600 | |

* Deductions.

| | *Phoenix Co.* | *Eastern Airports Inc.* | *Potomac Airport Co.* | |
|---|---|---|---|---|
| **PROFIT AND LOSS ACCOUNTS—1940** | | | | |
| Income | | | | |
| Rent | $ | $ | $ (8,500) | — |
| Profit on sales of securities | 165,000 | | | $ 165,000 |
| Revenue from port activities | | 75,000 | | 75,000 |
| Dividends | 25,000 | | | 25,000 |
| Interest | ~~48,000~~ 30,000 | | | 30,000 |
| | $ 238,000 | $ 75,000 | $ 8,500 | $ 295,000 |
| Expenses | | | | |
| Interest | $ | $ (18,000) | | — |
| General, including taxes | 75,000 | ~~46,000~~ 37,500 | 2,000 | $ 114,500 |
| Loss on sale of hangar | | | 3,000 | 3,000 |
| | $ 75,000 | $ 64,000 | $ 5,000 | $ 117,500 |
| Net income | $ 163,000 | $ 11,000 | $ 3,500 | $ 177,500 |

Step 4. *Prepare An "Analysis of Majority Retained Earnings and Minority Interests."*

This analysis is the "heart" of the method. A column is devoted to each equity interest; this means a column for the majority and a column for *each individual minority interest.* The analysis can be prepared using only the given year-end balances or it can start with the beginning of the year figures. The first illustration below is based on the year-end balances (Schedule 2); the one following starts with the beginning of the year balances (Schedule 2A). In either instance the overall procedure is the same.

1. **Apportion the individual book balances of retained earnings to the indicated equity interests, majority and minority. The diagram of ownership is useful in estab-**

lishing the various *direct* and *indirect* relationships. For example: The Eastern minority has a direct interest of 20% in the Eastern retained earnings and an 18% (20% of 90%) interest in the retained earnings of Potomac. The majority has a direct interest in Eastern (80%) and an indirect interest in Potomac 72% (80% of 90%).

2. Deduct purchased retained earnings as calculated in the Analysis of Acquisitions. This is necessary since in the first step the retained earnings which are spread may include some balances arising prior to the date of acquisition. It is obvious that only retained earnings subsequent to acquisition can increase the interests of the majority (or the minority with respect to its *indirect* interests).
3. Reduce (or increase) the appropriate retained earnings balances as required when the carrying value of a "combined balance sheet amount" (the margin calculations shown in Step 3) is to be changed.
4. If the analysis is for the year (Schedule 2A), start with the book balances at the beginning, deduct purchased retained earnings, and make such other adjustments as are required to make the opening balances *coincide with the correct closing figures of the prior year.* Next, allocate the individual companies' reported profits for the year in the same fashion as the retained earnings are allocated.

*SCHEDULE 2*

*PHOENIX COMPANY AND SUBSIDIARIES-ANALYSIS OF MAJORITY RETAINED EARNINGS AND MINORITY INTERESTS AS AT DECEMBER 31, 1940*

| | *Majority* | *20% Eastern Minority* | *10% Potomac Common Minority* | *100% Potomac Preferred Minority* | *Total* |
|---|---|---|---|---|---|
| Book Balances; Retained Earnings, Dec. 31, 1940 | | | | | |
| Phoenix | $688,000 | | | | $688,000 |
| Eastern | 18,000(1) | $ 4,500(2) | | | 22,500 |
| Potomac | 11,160*(3) | 2,790*(4) | $ 1,550*(5) | | 15,500* |
| Sub Totals | $694,840 | $ 1,710 | $ 1,550* | | $695,000 |
| Less: Purchased Retained Earnings* (or Add Purchased Deficit) | | | | | |
| In Eastern | $ 10,000*(6) | | | | $ 10,000* |
| In Potomac | 10,080(7) | $ 2,520(8) | | | 12,600 |
| | 80 | 2,520 | | | 2,600 |
| Sub Totals | $694,920 | $ 4,230 | $ 1,550* | | $697,600 |
| Adjustments: | | | | | |
| Add: To Correct for Entry of Eastern Stock Dividend | $ 60,000(9) | $15,000(10) | | | $ 75,000 |
| Less: To Provide for Potomac Preferred Arrearage | 3,456*(11) | 864*(11) | $ 480*(11) | $ 4,800 | |
| Interests in Retained Earnings as at December 31, 1940 | $751,464 | $18,366 | $ 2,030* | $ 4,800 | $772,600 |
| Minority Interests in: | | | | | |
| Paid in Capital | | $30,000 | | | |
| Capital Stock | | 30,000 | $20,000 | $40,000 | |
| Total Minority Interests | | $78,366 | $17,970 | $44,800 | $141,136 |

* Deduction.

(1) 80% of $22,500
(2) 20% of $22,500
(3) 80% of 90% of $15,500*
(4) 20% of 90% of $15,500*
(5) 10% of $15,500*
(6) See Schedule 1
(7) See Schedule 1; 80% of 90% of $14,000 or 80% of $12,600
(8) See Schedule 1; 20% of 90% of $14,000 or 20% of $12,600
(9) 80% of $75,000
(10) 20% of $75,000
(11) Since the Potomac Preferred is cumulative, provision for the arrearage is made here. The equity interests are calculated on the same basis as the interests in Potomac Common: 10% to the Direct Minority, 18% to the Indirect Minority, and 72% to the Majority.

### *SCHEDULE 2A*

### *PHOENIX COMPANY AND SUBSIDIARIES-ANALYSIS OF MAJORITY RETAINED EARNINGS AND MINORITY INTERESTS FOR THE YEAR 1940*

| | *Majority* | *20% Eastern Minority* | *10% Potomac Common Minority* | *100% Potomac Preferred Minority* | *Total* |
|---|---|---|---|---|---|
| Book Balances; Retained Earnings, January 1, 1940 | | | | | |
| Phoenix | $525,000 | | | | $525,000(1) |
| Eastern | 9,200 | $ 2,300 | | | 11,500(2) |
| Potomac—Pfd. Arrearage | | | | $ 2,400 | 2,400(3) |
| Potomac—Com. After Arrearage | 15,408* | 3,852* | $ 2,140* | | 21,400*(4) |
| Sub Totals | $518,792 | $ 1,552* | $ 2,140* | $ 2,400 | $517,500 |
| Less: Purchased Retained Earnings (Add Purchased Deficit) | $ 80 | $ 2,520 | | | $ 2,600(5) |
| Add: To Correct for Eastern Stock Dividend | 60,000 | 15,000 | | | 75,000 |
| Corrected, Jan. 1, 1940 Balances | $578,872 | $15,968 | $ 2,140* | $ 2,400 | $595,100 |
| Operating Results for the Year, | | | | | |
| Phoenix | $163,000 | | | | $163,000 |
| Eastern | 8,800(6) | $ 2,200(7) | | | 11,000 |
| Potomac | 792(11) | 198(10) | $ 110(9) | $ 2,400(8) | 3,500 |
| Shares of 1940 Profits | $172,592 | $ 2,398 | $ 110 | $ 2,400 | $177,500 |
| Interests in Retained Earnings at December 31, 1940 | $751,464 | $18,366 | $ 2,030* | $ 4,800 | $772,600 |
| Minority Interests in: | | | | | |
| Paid in Capital | | $30,000 | | | |
| Capital Stock | | 30,000 | $20,000 | $40,000 | |
| Total Minority Interests | | $78,366 | $17,970 | $44,800 | $141,136 |

* Deduction.

(1) $688,000–$163,000
(2) $22,500–$11,000
(3) To set up one year's arrearage.
(4) $15,500*+$2,400+$3,500
(5) Calculation from Schedule 2; not repeated here.
(6) 80% of $11,000
(7) 20% of $11,000
(8) To provide for the preferred arrearage.
(9) 10% of ($3,500–$2,400)
(10) 20% of 90% of ($3,500–$2,400)
(11) 80% of 90% of ($3,500–$2,400)

After we have worked through Step 3 and the "Operating Results Section" in Schedule 2A we become aware of the fact that "eliminations" due to consolidation can be divided into two groups:

*Group 1.* Intra-Statement Eliminations:

a. The intercompany transactions involving revenue (or ancillary income) and expense (or ancillary charge) in equal amounts. These eliminations are made to avoid overstating gross operating results *vis a vis* the "rest of the world." The net operating results will be correct even if there is a failure to make these eliminations.

b. The intercompany transactions involving receivables and payables, loans to and from, and the like are eliminated to avoid overstating gross assets and liabilities. Net current assets or net assets will be correct even if these eliminations are not made.

*Group 2.* Inter-Statement Eliminations:

The intercompany transactions which involve both the income statement and the balance sheet and require that profits be restated with a concomitant change in asset or equity expressions.

### *Inter-Statement Eliminations*

The kinds of transactions which require "inter-statement change" are the same in consolidations as they are in single company accounting. They are transactions which over-or-understate profit with a concomitant mistake on the Balance Sheet. Or, if the books are closed, these

transactions always involve a change in retained earnings and some related asset or equity account.

Included in this category are transactions which involve:

1. Ending inventory purchased inter-Company
2. Long-life assets purchased inter-Company
3. Bonds with original issue or acquisition premium or discount acquired inter-Company

The first two usually raise the question of intercompany profit; and where ownership is not 100 percent, the problem of minority share of profit is encountered. Suffice it to say that there are several diverse attitudes on the disposition of intercompany profit where ownership is not 100%. The three most widely discussed methods are:

1. Including minority share of profit as cost to the majority, or the "adjunct" method.
2. Eliminating all of the profit by a 100% charge to the majority.
3. Eliminating all of the profit by proportional allocation to the majority and the minority.

*Illustration II*

Since the first illustration did not provide for inter-Company profit in ending inventory or its companion problem of inter-Company profit in fixed assets, these are illustrated below with a problem which appeared in the May, 1959, C.P.A. Examination. The solution is based on the "adjunct" method; however, the amounts for the 100% charge are given in the notes.

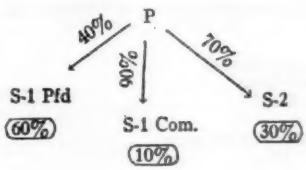



DIAGRAM OF OWNERSHIP

1. Post-closing trial balances as of December 31, 1958:

| | *Company P* | | *Company S-1* | Consolidated | *Company S-2* |
|---|---|---|---|---|---|
| Investment in Company S-1 (acquired January 1, 1957) | | | | | |
| Common Stock (90%) | ~~$200,000~~ | | | | |
| Preferred Stock (40%) | ~~40,000~~ | | | | |
| Investment in Company S-2 (70% Acquired Jan. 1, 1958) | ~~59,300~~ | | | | |
| Current Assets | 50,000 | (8,000) | $ 50,000 | 132,000 | $40,000 |
| Machinery & Equipment | 40,000 | | 20,000 | 90,000 | 30,000 |
| Allowance for Depreciation—Machinery & Equipment | (20,000) | | (15,000) | (45,000) | (10,000) |
| Bonds of Company S-2 (Par $10,000) | ~~10,100~~ | | | | |
| All other Assets | 600 | | 313,000 | 383,780 | 70,180 |
| Current Liabilities | (20,000) | 8,000 | (20,000) | (52,000) | (20,000) |
| Bonds Payable—10 yrs., 4%, due December 31, 1963 | | | | (20,000) | 20,000 ~~(30,000)~~ |
| Premium on Bonds Payable | | | | (150) | (150) ~~(180)~~ |
| Capital Stock—Common, Par $100 | (300,000) | | ~~(250,000)~~ | (300,000) | ~~(60,000)~~ |
| Capital Stock—Preferred, 5%, Par $100, Cumulative & Non-Participating | | | ~~200,000~~ ~~(100,000)~~ | | |
| Premium on Preferred Stock | | ~~60,000~~ | ~~(10,000)~~ | | (30) |
| Retained Earnings | (60,000) | | 12,000 | | (20,000) |
| | 0 | | 0 | | 0 |

(*Problem data continued on following page.*)

2. The investment accounts are carried at cost.
3. At acquisition, dividends on Preferred Stock for 1955 and 1956 were in arrears. Preferred Stock has a liquidation value of par plus all dividends in arrears and is non-voting.
4. On January 1, 1958, Company S-1 declared a common stock dividend of $50,000 from Premium on Preferred Stock.
5. The Retained Earnings accounts showed the following:

| | *S-1* | *S-2* |
|---|---|---|
| January 1, 1957 Balance | $(10,000) | $14,000 |
| Profits 1957 | 7,000 | 7,000 |
| Cash dividends 1958—on January 1, 1958 | (5,000) | |
| on December 31, 1958 | | (6,000) |
| Profit & Loss 1958 | (4,000) | 5,000 |
| Balance December 31, 1958 | (12,000) | 20,000 |

6. Inventory of Company P includes $5,000 merchandise purchased from S-2; cost to S-2 is marked up 25%.
7. Inventory of Company S-2 includes $2,000 merchandise purchased from S-1; markup by S-1 is 10% on selling price.
8. Current liabilities include the following: Company S-1 owes Company P $1,000; Company S-2 owes Company P $2,000; Company S-1 owes Company S-2 $3,000; and Company P owes Company S-1 $2,000.
9. Machinery having a life of 10 years was purchased by Company P from Company S-1 on January 1, 1957 for $10,000. Cost to S-1 was $7,000.
10. Company S-2 neglected to amortize Premium on Bonds Payable for 1958.

### *SCHEDULE 1*

### *COMPANY P AND SUBSIDIARIES-ANALYSIS OF INVESTMENTS COMPARING COSTS TO BOOK VALUES ACQUIRED AS AT VARIOUS DATES OF ACQUISITION*

| *Description & Date* | *Cost* | *Book Values at Acquisition Date* | *% Acquired* | *Book Values Acquired* | *Excess of Cost over Book Value* |
|---|---|---|---|---|---|
| P in S-1 (1/1/57) | | | | | |
| Common | $200,000 | Cap. Stk. 200,000 | 90% | $180,000 | |
| | | Prem. on Cap. Stk. 60,000 | | 54,000 | |
| | | Deficit (10,000) | | (9,000) | |
| | | Pref. arrear (10,000) | | (9,000) | $16,000 |
| | | | | $216,000 | |
| Preferred | $ 40,000 | Cap. Stk. 100,000 | 40% | $ 40,000 | |
| | | Arrear 10,000 | | 4,000 | |
| | | | | $ 44,000 | 4,000 |
| P in S-2 (1/1/58) | | | | | |
| Common | $ 59,300 | Cap. Stk. 60,000 | 70% | $ 42,000 | |
| | | Retained Earnings 21,000 | | 14,700 | (2,600) |
| | | | | $ 56,700 | $17,400 |

*SCHEDULE 2*

*COMPANY P AND SUBSIDIARIES-ANALYSIS OF MAJORITY RETAINED EARNINGS AND MINORITY INTERESTS AT DECEMBER 31, 1958*

| | *Majority* | *10% S-1 Common Minority* | *60% S-1 Preferred Minority* | *30% S-2 Minority* | *Total* |
|---|---|---|---|---|---|
| Book Balances: Retained Earnings, December 31, 1958 | | | | | |
| Company P | $60,000 | | | | $ 60,000 |
| Less: Dividend erroneously taken to income | 2,000*① | | | | 2,000* |
| Corrected Company P Retained Earnings | $58,000 | | | | |
| Company S-1 Book Deficit | 10,800* | $ 1,200* | | | 12,000* |
| Preferred Arrearage: | | | | | |
| Charges | 13,500* | 1,500* | | | 15,000* |
| Credits | 6,000 | | $ 9,000 | | 15,000 |
| Company S-2, after correction② | 14,021 | | | $ 6,009 | 20,030 |
| | $53,721 | $ 2,700* | $ 9,000 | $ 6,009 | $ 66,030 |
| Less: Purchased Retained Earnings* or Add: Purchased Deficit | | | | | |
| In S-1 Common | $18,000 | | | | $ 18,000 |
| In S-1 Preferred—*Remaining* Purchased Arrearage | 2,000* | | | | 2,000* |
| In S-2 | 14,700* | | | | 14,700* |
| | $ 1,300 | | | | $ 1,300 |
| Balances before interstatement adjustments | $55,021 | $ 2,700* | $ 9,000 | $ 6,009 | $ 67,330 |
| Adjustments Arising from Consolidation | | | | | |
| Inter-co. profit, Inventory; S-2 to P③ | $ 700* | | | | $ 700* |
| Inter-co. profit, Inventory; S-1 to S-2④ | 180* | | | | 180* |
| Inter-co. profit, Machinery; S-1 to P⑤ | 2,160* | | | | 2,160* |
| Bond Premium⑥ | 50* | | | | 50* |
| Net debit adjustment | $ 3,090* | | | | $ 3,090* |
| Adjusted Balances; Retained Earnings | $51,931 | $ 2,700* | $ 9,000 | $ 6,009 | $ 64,240 |
| Interests in: Capital Stock | | 20,000 | 60,000 | 18,000 | |
| Premium on preferred Stock | | 6,000 | | | |
| Total Minority Interests | | $23,300 | $69,000 | $24,009 | $116,309 |

* Deduction.

Explanatory Notes:

① S-1 dividend on January 1, 1958 assumed to be on preferred stock, making up the arrearage of 1955. Since the problem states that investments are carried at cost, it is assumed here that the 40% received by Company P was recorded as income rather than a reduction of capital. Preferred dividends for 1956, 1957, and 1958 remain in arrears.

② Company S failed to amortize Premium on Bonds for 1958. Correcting entry reduces Bond Premium and increases retained earnings by $30.

③ Inter-company profit of $1,000; 25% of $4,000. Majority share is 70% or $700; minority share is $300. Three hundred dollars as inventory adjunct or charge majority with full $1,000.

④ Inter-company profit of $200; 10% of $2,000. Majority share is 90% or $180, or charge majority with full $200.

⑤ Inter-company profit of $3,000; majority share $2,700. Depreciation over-stated $270 for each of 2 years. Adjustment: Overstated asset $2,700 minus overstated depreciation of $540, or $2,160. Alternatively, charge majority with full $3,000 and credit with $600.

⑥ Write off Bond Premium paid by P—$100 debit; and reduce Bond Premium on S-2's Bonds to portion held by outsiders—⅓ of $150 or $50. Net debit of $50 to majority.

*EXHIBIT I*

*COMPANY P AND SUBSIDIARIES*
*CONSOLIDATED BALANCE SHEET*
*as at December 31, 1958*

*ASSETS*

| | | |
|---|---|---|
| Current Assets: (140,000—8,000—700—180) | | $131,120 |
| Machinery & Equipment, at intercompany cost (90,000–2,700) | | 87,300 |
| Less: Allowance for Depreciation (45,000–540) | | (44,460) |
| Other Assets | | 383,780 |
| Total Assets | | $557,740 |

*EQUITIES*

| | | |
|---|---|---|
| Current Liabilities: (60,000–8,000) | | $ 52,000 |
| Bonds Payable: | $30,000 | |
| Less: Bonds held intercompany | 10,000 | |
| | 20,000 | |
| Add: Unamortized Bond Premium | 100 | 20,100 |
| Minority Interests | | 116,309 |
| Shareholders Equity: | | |
| Capital Stock—Common, Par $100 | 300,000 | |
| Excess of Book Value over Cost in Consolidation | 17,400 | |
| Retained Earnings | 51,931 | 369,331 |
| Total Equities | | $557,740 |

CONCLUSION

The attempt here has been to demonstrate a useful technique for the preparation of consolidated statements. Elaborate (conventional) work sheets are not required and it is felt that the ones illustrated could serve the practicing accountant.

The question as to the *proper* method for disposition of minority share of intercompany profit of the three listed earlier is deliberately not raised here. Probably the answer relates to the *purpose* of the consolidated statements. Once this is established, questions as to dispositions of minority shares of intercompany profit may be answered with relative ease. In any event, the technique is the same irrespective of the method adopted.

# PROFESSIONAL EXAMINATIONS

## ACCOUNTING PRACTICE

HENRY T. CHAMBERLAIN AND JOHN H. CHAMBERLAIN

THE following problems were prepared by the Board of Examiners of the American Institute of Certified Public Accountants and were presented as the first half of the C.P.A. examination in accounting practice on November 2, 1960.

The candidates were required to solve all problems.

The suggested time allowances are as follows:

| | |
|---|---|
| Problem 1 | 25 to 35 minutes |
| Problem 2 | 15 to 20 minutes |
| Problem 3 | 25 to 35 minutes |
| Problem 4 | 25 to 35 minutes |
| Problem 5 | 40 to 60 minutes |
| Problem 6 | 60 to 85 minutes |

*Number 1*

Prior to January 1, 1959, ABC Company, a wholly-owned subsidiary of XYZ Company, conducted a business of importing hemp and fiber for resale purposes. As of January 1, 1959, ABC Company changed its business by entering into an agency agreement with the parent company whereby all transactions of ABC Company would be as agent for the purposes of purchasing and selling hemp and fiber for the account of XYZ Company as principal. The agreement provided, among other things, that ABC Company receive $1.80 a ton for all hemp and fiber purchased for XYZ Company, including the beginning inventory.

During the course of your examination, you find that the books of account of ABC Company at December 31, 1959, the close of its business year, gave no effect to the agency agreement, and that certain of the accounts are as follows:

| | |
|---|---|
| Beginning inventory | $ 87,129.90 |
| Ending inventory | 79,430.40 |
| Sales | 8,643,797.36 |
| Purchases (after adjustment for ending inventory, $79,430.40) | 8,449,294.76 |

The beginning and ending inventories were priced (first-in, first-out basis, at cost which is not in excess of market) at $7.15 and $7.20 per hundred pounds, respectively. The average prices per hundred pounds for purchases (as recorded in the books of account after the adjustment for ending inventory) and sales were $7.18 and $7.27, respectively. During the year, payments of $50,000, applicable to the settlement of the transfer of beginning inventory, were received from the XYZ Company which have been credited to Accounts Receivable.

*Required:*

a. Journal entries as of December 31, 1959 to correct the books of account. (The books are not yet closed.)

b. Footnote to financial statements of ABC Company, if any is deemed necessary in the circumstances.

*Number 2*

The Deep Hole Mining Co. started mining in the current year on certain land leased from T. Realty Company.

The royalty provisions in the lease are as follows:

a. Minimum annual royalty—$6,000, with minimum of $1,500 payable quarterly. Unearned minimum royalties may be recovered in any subsequent period from earned royalties in excess of minimum royalties. Minimum royalties of $18,000 were paid for the three years prior to the current year.

b. Earned royalty—$.10 per ton shipped from the mine plus a per ton amount equal to 2% of the amount that the market value of the ore at the mine exceeds $4.00 per ton.

Operations in the current year were as follows:

| | | Per Ton | |
|---|---|---|---|
| *Periods* | *Tons Shipped* | *Market Value at Destination* | *Freight From Mine to Destination* |
| 1st quarter | None | — | — |
| 2nd quarter | 100,000 | $10.50 | $3.10 |
| 3rd quarter | 200,000 | 10.00 | 3.20 |
| 4th quarter | None | — | — |
| | 300.000 | | |

*Required:*

Compute the amount of royalty to be paid to T. Realty Company for the current year and the amount of unearned minimum royalty at the end of the year.

*Number 3*

The Board of Directors of the ABC Corporation on December 1, 1959 declared a 2% stock dividend on the common stock of the corporation, payable on December 28, 1959 to the holders of record at the close of business December 15, 1959. They stipulated that cash dividends were to be paid in lieu of issuing any fractional shares. They also directed that the amount to be charged against Retained Earnings should be an amount equal to the market value of the stock on the record date multiplied by the total of (a) the number of shares issued as a stock dividend and (b) the number of shares upon which cash is paid in lieu of the issuance of fractional shares.

The following facts are given:

| | |
|---|---|
| 1. At the dividend record date— | |
| (a) Shares of ABC common issued | 2,771,600 |
| (b) Shares of ABC common held in treasury | 1,000 |
| (c) Shares of ABC common included in (a) held by persons who will receive cash in lieu of fractional shares | 202,500 |
| (d) Shares of predecessor company stock which are exchangeable for ABC common at the rate of $1\frac{1}{2}$ shares of ABC common for each share of predecessor company stock (necessary number of shares of ABC common have been reserved but not issued) | 600 |
| Provision was made for a cash dividend in lieu of fractional shares to holders of 240 of these 600 shares. | |
| 2. Values of ABC common were: | |
| Par value | $ 5 |
| Market value at December 1st and 15th (Bid) | 21 |
| (Asked) | 23 |
| Book value at December 1st and 15th | 16 |
| Capital value at December 1st and 15th | 10 |

*Required:*

Entries and explanations necessary to record the payment of the dividend.

*Number 4*

Your new client has not prepared financial statements for three years since December 31, 1956. He used the accrual method of accounting and reported income on a calendar year basis prior to 1957. During the three years since December 31, 1956 his cash receipts and cash disbursements records were maintained and sales on account were entered, when made, directly into an accounts receivable ledger. However, no general ledger postings have been made since the December 31, 1956 closing.

Your examination has disclosed balances at the beginning and the end of the three-year period as follows:

| | December 31, 1956 | December 31, 1959 |
|---|---|---|
| Aging of accounts receivable— | | |
| Less than 1 year old | $7,700 | $14,100 |
| 1 to 2 years old | 600 | 900 |
| 2 to 3 years old | | 400 |
| Over 3 years old | | 1,100 |
| Total accounts receivable | $8,300 | $16,500 |
| Inventories | $5,800 | $ 9,400 |
| Accounts payable—merchandise purchases | $2,500 | $ 5,500 |

You have satisfied yourself as to the accuracy of the balances shown above. Other information available to you is as follows:

| | 1957 | 1958 | 1959 |
|---|---|---|---|
| Cash received on account— | | | |
| Applied to— | | | |
| Current years collections | $74,400 | $80,900 | $104,400 |
| Accounts of the prior year | 6,700 | 7,500 | 8,400 |
| Accounts of two years prior | 300 | 200 | 1,000 |
| Total | $81,400 | $88,600 | $113,800 |
| Cash sales | $ 8,500 | $13,000 | $ 15,600 |
| Disbursements for merchandise purchases | $62,500 | $70,600 | $ 86,900 |

No account balances have been written off as uncollectible during the three-year period. The ratio of gross profit to sales remains constant from year to year.

*Required:*

A schedule showing sales, cost of sales and gross profit for each of the years 1957, 1958 and 1959. Support the schedule with computations in good form.

*Number 5*

The Loading Company is planning to construct a two-unit facility for the loading of iron ore into ships. On or before January 1, 1961, the stockholders will invest $100,000 in the company's capital stock to provide its initial working capital. To finance the construction program (the total planned cost of which is $1,800,000), the company will obtain a commitment from a lending organization for a loan of $1,800,000. This loan is to be secured by a ten-year mortgage note bearing interest at 5% per year on the unpaid balance. The principal amount of the loan is to be repaid in equal semiannual installments of $100,000 beginning June 30, 1962.

Inasmuch as the proceeds of the loan will only be required as construction work progresses, the company has agreed to pay a commitment fee beginning January 1, 1961 equal to 1% per year on the unused portion of the loan commitment. This fee is payable at the time amounts are "drawn-down," except at the time of the first "draw-down."

Work on the construction of the facility will commence in the fall of 1960. The first payment to the contractor will be due on January 1, 1961, at which time the commitment and loan agreement will become effective and the company will make its first "draw-down," for payment to the contractor, in the amount of $800,000. As construction progresses, additional payments will be made to the contractors by "drawing-down" the remaining loan proceeds as follows (it is assumed that payment to the contractors will be made on the same dates as the loan proceeds are "drawn-down"):

| | |
|---|---|
| April 1, 1961 | $500,000 |
| July 1, 1961 | 300,000 |
| December 31, 1961 | 100,000 |
| April 1, 1962 | 100,000 |

Because of weather conditions, the facility can operate only from April 1 through November 30 of each year. The construction program will permit the completion of the first of the two plant units (capable of handling 5,000,000 tons) in time for its use during the 1961 shipping season. The second unit (capable of handling an additional 3,000,000 tons) will be completed in time for the 1962 season. It is expected that 5,000,000 tons will be handled by the facility during the 1961 season; thereafter, the tonnage handled is expected to increase in each subsequent year by 300,000 tons until a level of 6,500,000 tons is reached.

The company's revenues will be derived by charging the consignees of the ore for its services at a fixed rate per ton loaded. Billing terms will be net, ten days. Based upon past experience with similar facilities elsewhere, it is expected that the Loading Company's operating profit should average $.04 per ton before charges for interest, finance charges, and depreciation of $.03 per ton.

*Required:*

A cash forecast for each of three calendar years starting with 1961 to demonstrate the sufficiency of cash, to be obtained from (1) the sale of capital stock, (2) "draw-downs" on the loan, and (3) amount to be produced by the operating facility, to cover payments to the contractor and on the debt principal and interest. Assuming a federal income tax rate of 52%, compute the federal income taxes, if any, payable during the three-year period and/or the operating loss carry-over, if any, available to the corporation for the year beginning January 1, 1954. (For tax and accounting purposes, the commitment fee is to be charged in the year paid.)

*Number 6*

You have been engaged for advice on several details of J. W. Gore's personal federal income tax return for 1959. Your examination revealed the following information.

On May 1, 1957, B. W. Gore purchased an All-purpose Tractor Unit for $9,000 and on October 1, 1958, gave this unit to his son, J. W. Gore, who used it in his business. The accumulated depreciation to date of gift was $1,500. On the date of the gift the tractor unit had a fair market value of $7,000. (No gift tax was incurred by B. W. Gore.)

J. W. Gore also used a truck in his business. His old truck was sold in December 1957. A truck was purchased new on January 1, 1958, at a cost of $5,400, and J. W. Gore paid $1,000 down, financing the balance with a chattel mortgage on the truck. J. W. Gore estimated that the tractor would have a five-year useful life and the truck a six-year useful life in his hands. He took the maximum depreciation allowed under the declining-balance method wherever possible and only used straight-line depreciation when he was not able to qualify an asset under the former method. He did not elect to use the 20% additional first-year depreciation. The method(s) used in depreciating the tractor and the truck for accounting purposes were the same as the allowable income tax method(s).

On October 1, 1959, J. W. Gore sold the all-purpose tractor for $4,800 and purchased a new tractor assembly for $9,200.

On July 1, 1959, J. W. Gore traded his truck for a new one which cost, and had a fair market value of, $4,500. The dealer assumed the chattel mortage after the principal had been reduced to $2,600, and J. W. paid $2,000 net cash difference on the deal.

On July 1, 1959, J. W. Gore was involved in an automobile accident. The automobile, which was purchased new on January 1, 1958 at a cost of $4,000 with an estimated useful life of 5 years, was used by J. W. Gore 60% of the time for business. The value of the automobile was $2,200 before the accident; it was completely destroyed.

On October 5, 1959, the insurance company paid J. W. Gore $2,000. J. W. Gore purchased a new automobile at a cost of $4,200; it is his desire to defer the recognition of any gain to the extent possible.

J. W. Gore learned that a $500 personal loan he had made in 1957 became uncollectible in 1959. In addition to any capital gains and losses resulting from the above transactions, J. W. Gore had other long-term capital gains of $5,000 from the sale of common stock, other short-term capital gains of $1,000 from the sale of common stock, and a net capital loss carry-over of $1,200 from 1958.

J. W. Gore has consistently filed his federal income tax return on a calendar year basis. Salvage value on trucks and tractors may be ignored.

*Required:*

Compute the following in connection with J. W. Gore's 1959 federal income tax return:

a. With respect to the sale of the tractor:
   1. The realized gain (or loss) for accounting purposes.
   2. The recognized gain (or loss) for tax purposes.
   3. The recognized gain (or loss) for tax purposes if the tractor had been sold for $6,500.
   4. The tax basis of the new tractor.

b. With respect to the trading of the truck:
   1. The realized gain (or loss) for accounting purposes.
   2. The recognized gain (or loss) for tax purposes
   3. The tax basis of the new truck.

c. With respect to the accident:
   1. The recognized gain (or loss) for tax purposes on the automobile.
   2. The tax basis of the new automobile.

d. Net capital gain (or loss).

e. Long-term capital gain deduction.

f. Casualty loss, if any, and/or business gain or loss from sales and exchanges of business assets arising from the listed transactions.

### *Solution to Problem I*

**ABC COMPANY**
*December 31, 1959*

a. Adjusting journal entries:

| | | |
|---|---|---|
| (1) Sales | $8,643,797.36 | |
| Beginning inventory | | $ 87,129.90 |
| Purchases | | 8,449,294.76 |
| Ending inventory | | 79,430.40 |
| XYZ Company | | 27,942.30 |
| To reflect purchases and sales of hemp as transactions for the account of the XYZ Company. | | |
| (2) XYZ Company | $ 108,000.00 | |
| Commission income | | $ 108,000.00 |

To record commission income for the year:

| | *Ledger Balance at 12–31–59* | *Average Price per Cwt.* | *Number of Pounds* | *Number of Tons* |
|---|---|---|---|---|
| Beginning inventory | $ 87,129.90 | $7.15 | 1,218,600 | 609.3 |
| Purchases (net of ending inventory) | 8,449,294.76 | 7.18 | 117,678,200 | 58,839.1 |
| Ending inventory | 79,430.40 | 7.20 | 1,103,200 | 551.6 |
| | | | | 60,000.0 |

Commission earned (at the rate of $1.80/ton of hemp purchased, including beginning inventory) .......... $108,000.00

b. Note to financial statements:

Prior to January 1, 1959, the ABC Company purchased and sold hemp for its own account. Subsequent to December 31, 1958, however, in accordance with an agreement between the ABC Company and its parent, the XYZ Company, all purchases and sales of hemp are as agent for the XYZ Company. As a result of this agreement, title to the inventory at December 31, 1958, amounting to $87,129.90, was transferred to the XYZ Company and this latter amount has been reclassified as a charge to the account of the XYZ Company.

### *Solution to Problem 2*

**DEEP HOLE MINING COMPANY**
**CALCULATION OF ROYALTY PAYABLE AND UNEARNED MINIMUM ROYALTY**

| | *Unearned Minimum Royalty* | *Earned Royalty* | *Royalty Payable* |
|---|---|---|---|
| Balance of unearned minimum at beginning of year | $18,000 | | |
| First quarter (minimum royalty) | 1,500 | | 1,500 |
| | $19,500 | | |
| Second and third quarter: | | | |
| On tons shipped—300,000@$.10/ton | | $30,000 | |
| On 2% of excess of market at mine over $4.00 ton | | | |
| 100,000×$3.40×2% | | 6,800 | |
| 200,000×$2.80×2% | | 11,200 | |
| Total earned royalty | | $48,000 | |
| Credit for unearned minimum royalties paid in prior periods | (19,500) | (19,500) | |
| | | $28,500 | 28,500 |
| Fourth quarter (minimum royalty) | $ 1,500 | | 1,500 |
| Balance at end of year | $ 1,500 | | $31,500 |

### *Solution to Problem 3*

**ABC COMPANY**
**JOURNAL ENTRY TO RECORD STOCK DIVIDEND**

| | | |
|---|---|---|
| Retained earnings | $1,219,394 | |
| Cash | | $ 89,100 |
| Common stock | | 256,810 |
| Premium on common stock | | 873,307 |
| Stock dividend reserved | | 45 |
| Cash dividend reserved | | 132 |

To record issuance of a 2% stock dividend and payment of cash in lieu of fractional shares as follows:

| | *Outstanding Shares* | *2% of No. of Shares* | *Amount per Share* | *Total Amount* |
|---|---|---|---|---|
| Total outstanding | 2,770,600 | | | |
| Payable in cash | 202,500 | 4,050 | $22.00 | $ 89,100 |
| | 2,568,100 | 51,362 | | |
| Credit to common stock | | 51,362 | 5.00 | $ 256,810 |
| Credit to premium on common stock | | 51,362 | 17.00 | $ 873,154 |
| Stock dividend applicable to predecessor company: | | | | |
| Total shares | 750* | | | |
| Less shares which will receive cash | 300* | 6 | | |
| | 450 | 9 | | |
| Credit to premium on common stock | | 9 | 17.00 | 153 |
| Total | | | | $ 873,307 |
| Credit to stock dividend reserved | | 9 | 5.00 | $ 45 |
| Credit to cash dividend reserved | | 6 | 22.00 | $ 132 |
| Total charge to retained earnings | | | | $1,219,394 |

* Stated in the equivalent number of shares of ABC common.

## *Solution to Problem 4*

*Calculation of sales:*

| | *1957* | *1958* | *1959* | *Total* |
|---|---|---|---|---|
| Cash sales | $ 8,500 | $ 13,000 | $ 15,600 | $ 37,100 |
| Sales on account: | | | | |
| Collected in 1957 | 74,400 | | | 74,400 |
| Collected in 1958 | 7,500 | 80,900 | | 88,400 |
| Collected in 1959 | 1,000 | 8,400 | 104,400 | 113,800 |
| Uncollected at 12-31-59 | 400 | 900 | 14,100 | 15,400 |
| | $91,800 | $103,200 | $134,100 | $329,100 |

*Calculation of cost of sales:*

| | |
|---|---|
| Disbursements for merchandise purchases: | |
| 1957 | $ 62,500 |
| 1958 | 70,600 |
| 1959 | 86,900 |
| Increase in accounts payable—merchandise purchases at end of period over beginning of period | 3,000 |
| Total | $223,000 |
| Less increase in inventory at end of period over beginning of period | 3,600 |
| Cost of sales for the three year period | $219,400 |
| Ratio of cost of sales to sales for the three year period | $66\frac{2}{3}\%$ |
| Cost of sales by years: | |
| 1957 sales ($91,800)×$66\frac{2}{3}\%$ | $ 61,200 |
| 1958 sales ($103,200)×$66\frac{2}{3}\%$ | 68,800 |
| 1959 sales ($134,100)×$66\frac{2}{3}\%$ | 89,400 |
| Total | $219,400 |

Schedule of sales, cost of sales, and gross profit for the years ended December 31, 1957, 1958, and 1959:

| | *1957* | *1958* | *1959* | *Total* |
|---|---|---|---|---|
| Sales | $91,800 | $103,200 | $134,100 | $329,100 |
| Cost of sales | 61,200 | 68,800 | 89,400 | 219,400 |
| Gross profit | $30,600 | $ 34,400 | $ 44,700 | $109,700 |

*Solution to Problem 5*

### THE LOADING COMPANY
### CASH FORECAST
*For the Years Ended December 31, 1961, 1962 and 1963*

*Interest and Commitment Fee:*

| | Amount of Loan | Interest or Fee |
|---|---|---|
| *1961:* | | |
| To be borrowed 1-1-61 | $ 800,000 | |
| To be borrowed 4-1-61 | 500,000 | |
| Commitment fee due 4-1-61 ($1,000,000×1%×¼) | | $ 2,500 |
| To be borrowed 7-1-61 | 300,000 | |
| Commitment fee due 7-1-61 ($500,000×1%×¼) | | 1,250 |
| To be borrowed 12-31-61 | 100,000 | |
| Commitment fee due 12-31-61 ($200,000×1%×½) | | 1,000 |
| Interest due on loan: | | |
| On $800,000 @5% | | 40,000 |
| On $500,000 @5%×¾ | | 18,750 |
| On $300,000 @5%×½ | | 7,500 |
| Total at 12-31-61 | $1,700,000 | $71,000 |
| *1962:* | | |
| To be borrowed 4-1-62 | 100,000 | |
| Commitment fee due 4-1-62 ($100,000×1%×¼) | | $ 250 |
| Repayment of loan: | | |
| Due 6-30-62 | (100,000) | |
| Due 12-31-62 | (100,000) | |
| Interest due on loan: | | |
| On $1,700,000 @5%×¼ | | 21,250 |
| On $1,800,000 @5%×¼ | | 22,500 |
| On $1,700,000 @5%×½ | | 42,500 |
| Total at 12-31-62 | $1,600,000 | $86,500 |
| *1963:* | | |
| Repayment of loan: | | |
| Due 6-30-63 | (100,000) | |
| Due 12-31-63 | (100,000) | |
| Interest due on loan: | | |
| On $1,600,000 @5%×½ | | $40,000 |
| On $1,500,000 @5%×½ | | 37,500 |
| Total at 12-31-63 | $1,400,000 | $77,500 |

*Revenue from operations:*

| | 1961 | 1962 | 1963 |
|---|---|---|---|
| Operating profit (at $.04 per ton handled) | $200,000 | $212,000 | $224,000 |
| Interest and commitment fees | 71,000 | 86,500 | 77,500 |
| Cash derived from operations | $129,000 | $125,500 | $146,500 |
| Depreciation (at $.03 per ton handled) | 150,000 | 159,000 | 168,000 |
| Operating loss | $ 21,000 | $ 33,500 | $ 21,500 |
| Operating loss from prior year(s) | | 21,000 | 54,500 |
| Accumulated operating loss | | $ 54,500 | $ 76,000 |

*Cash forecast summary:*

| | 1961 | 1962 | 1963 |
|---|---|---|---|
| Cash balance at beginning of period | | $229,000 | $154,500 |
| Cash received from stockholders | $ 100,000 | | |
| Proceeds of loan | 1,700,000 | 100,000 | |
| Excess of cash income over cash expenses | 129,000 | 125,500 | 146,500 |
| Payments for construction | (1,700,000) | (100,000) | |
| Payments on loan | | (200,000) | (200,000) |
| Cash balance at end of period | $ 229,000 | $154,500 | $101,000 |

The operating loss carry-over for the year beginning January 1, 1964 amounts to $76,000.

*Solution to Problem 6*

*J. W. GORE*
*1959 FEDERAL INCOME TAX DATA*

a. Sale of Tractor:

| | *Tax Basis* Basis for Gain | *Tax Basis* Basis for Loss | *Accounting Basis* |
|---|---|---|---|
| Basis at 10-1-58 | $7,500 | $7,000 | $7,000 |
| Depreciation to 10-1-59 (straight-line at 20% per year) | 1,500 | 1,500* | 1,400 |
| Adjusted basis at 10-1-59 | $6,000 | $5,500 | $5,600 |
| Sales price of $4,800 | | 4,800 | 4,800 |
| Loss for tax and accounting purposes on sale at $4,800 | | $ 700 | $ 800 |
| Sales price of $6,500 | 6,500 | | |
| Gain for tax purposes on sale at $6,500 | $ 500 | | |

* Basis for depreciation is the basis for determining gain from a sale.

The tax basis of the new tractor is $9,200. The preceding gain or loss would be reflected as an adjustment of the basis of the new tractor only if it arose from a trade-in on a new tractor.

b. Trading of Truck:

| | | *Basis of Truck* |
|---|---|---|
| Cost of truck purchased 1-1-58 | | $5,400 |
| Depreciation to 7-1-59 (double declining balance; six year life): | | |
| To 12-31-58 (33⅓% of $5,400) | $1,800 | |
| To 7-1-59 [33⅓%×½ of ($5,400−$1,800)] | 600 | 2,400 |
| Adjusted basis at 7-1-59 | | $3,000 |
| Amount of trade-in received: | | |
| Fair market value of new truck | $4,500 | |
| Indebtedness assumed by buyer | 2,600 | |
| Total | $7,100 | |
| Less cash paid to buyer | 2,000 | 5,100 |
| Gain on exchange for accounting purposes | | $2,100 |

The gain on the exchange recognized for tax purposes is limited to the excess of the amount of the liability assumed (considered as equivalent to cash), $2,600, over the amount of cash paid out, $2,000, or a gain of $600.

The basis of the new truck is $3,000 ($4,500 less that part of the total gain not recognized, or $1,500).

c. With Respect to the Accident:

| | | *Business Portion (60%)* | *Personal Portion (40%)* |
|---|---|---|---|
| Cost of automobile purchased 1-1-58 | | $2,400 | $1,600 |
| Depreciation to 7-1-59 (double declining balance, five year life): | | | |
| To 12-31-58 (40% of $2,400) | $960 | | |
| To 7-1-59 (½×40% of $2,400 less $960) | 288 | 1,248 | |
| Adjusted basis for business casualty loss | | $1,152 | |
| Tentative basis for personal casualty loss | | | $1,600 |
| Basis for personal casualty loss—40% of fair market value before destruction (the lesser of the adjusted basis, $1,600, or fair market value, 40% of $2,200, is used in determining personal casualty loss) | | | $ 880 |
| Amount recovered | | $1,200 | $ 800 |
| Gain—elected not to recognize | | $ 48 | |
| Deductible loss | | | $ 80 |
| Basis of new auto: | | | |
| Cost | | $2,520 | $1,680 |
| Less gain not recognized from involuntary conversion | | 48 | |
| **Basis** | | $2,472 | $1,680 |

d. and e. Net Capital Gain and Capital Gain Deduction

| | Short Term | Long Term |
|---|---|---|
| Non-business bad debts | $ (500) | |
| Capital gains from sale of stock | 1,000 | $5,000 |
| Total | $ 500 | $5,000 |
| Capital loss carry-over from 1958 | (1,200) | |
| Net short-term capital loss and amount deductible from long-term capital gain | $ (700) | (700) |
| Net long-term capital gain | | $4,300 |
| Capital gain deduction (50% of $4,300) | | $2,150 |

f. Casualty Losses and Business Gains and Losses:

| | Personal (Losses) | Business Gains and (Losses) |
|---|---|---|
| Personal casualty loss from destruction of auto | $(80) | |
| Gain or loss on sale or exchange of business assets: | | |
| Sale of tractor | | $(700) |
| Exchange of trucks | | 600 |
| | $(80) | $(100) |

# EXAMINATION IN AUDITING

Walter B. Meigs

The auditing section of the November 1960 Uniform C.P.A. Examination was given November 3, 1960 from 8:30 to 12:00 noon and consisted of seven questions—all required. The suggested time allotments were as follows:

| | *Estimated Minutes* *Minimum* | *Maximum* |
|---|---|---|
| No. 1 | 15 | 20 |
| No. 2 | 25 | 35 |
| No. 3 | 15 | 25 |
| No. 4 | 20 | 30 |
| No. 5 | 25 | 35 |
| No. 6 | 25 | 35 |
| No. 7 | 20 | 30 |
| Total for examination | 145 | 210 |

*Number 1 (Estimated time—15 to 20 minutes)*

In connection with your audit, you request that the management furnish you with a letter or letters containing certain representations. For example, such representations might include the following: (1) the client has satisfactory title to all assets, (2) no contingent or unrecorded liabilities exist except as disclosed in the letter, (3) no shares of the company's stock are reserved for options, warrants or other rights, and (4) the company is not obligated to repurchase any of its outstanding shares under any circumstances.

*Required:*

a. Explain why you believe a letter of representation should be furnished to you. (Do not discuss the content of the letter.)

b. In what way, if any, do client representations affect your audit procedures and responsibilities?

*Answer 1*

a. The auditor's purpose in obtaining a letter of representation is to emphasize that management has primary responsibility for the fairness and completeness of the financial statements. The client who is asked to sign a letter of representation will usually take steps to assure himself that full disclosure is being made before he "goes on record" in a formal statement. The use of this letter tends to counteract any fallacious notions that management can delegate its primary responsibility for proper financial reporting merely by retaining independent public accountants.

The letter also helps to avoid the misunderstandings so likely to occur in oral inquiries and replies. It stresses to the client the need for him to make available to the auditor all types of information which have a bearing on the financial statements.

Such items as contingent liabilities are not normally entered in the accounting records, but may materially affect the fairness of the financial statements. A formal inquiry of management is a principal means of bringing these items to light, and the inclusion of the letter of representation in the audit working papers is evidence of the thoroughness of the auditor's investigation.

b. Letters of representation by the client do not excuse the auditor from any normal auditing procedures nor do they reduce the scope of his responsibilities in expressing his professional opinion on the fairness of the financial statements.

*Number 2 (Estimated time—25 to 35 minutes)*

Your client, Star Wholesale Co., is a wholesaler selling merchandise to local hardware and paint stores. The Coaton Paint Co. has sold its outdoor paint products to Star Wholesale Co. for years on regular terms. Recently the Coaton Paint

Co. developed a new line of indoor paint and, to introduce the paint, offered it to distributors on a consignment basis.

In your preliminary work prior to the annual physical inventory, you determine that a proper consignment contract had been signed but the accounting department had not been advised of it. Invoices for consigned merchandise were paid when submitted without regard for the consignment feature. Consigned merchandise was not set aside in the warehouse. Under the consignment contract, Star Wholesale was supposed to remit monthly for paint sold.

*Required:*

a. What audit procedures would you recommend for verifying the consigned stock.

b. What adjustments of balance sheet accounts, if any, might be required?

c. The discovery that the accounting department had not been advised of the consignment contract is an indication of weakness in internal control. What procedures of the company should be reviewed for possible expansion or other changes?

*Answer 2*

a. Since the auditor discovered the unsatisfactory control over consigned goods *before* the balance sheet date, he can and should request the client to segregate the consigned stock before taking the annual physical inventory. Verification of the consigned goods on hand by physical count is an essential step in determining the amount advanced to the consignor and the proper amounts for inventory and accounts payable. Suggested audit procedures are:

(1) Study the consignment contract and make notes for the audit working papers of the date, types of goods, reports required, and time for payment.

(2) In advance planning of the physical inventory, determine that client has segregated the consigned goods and has given appropriate instructions for counting them.

(3) Make test counts of consigned goods during physical inventory and trace these counts to final summary sheets.

(4) Prepare or have client prepare a summary schedule reconciling the following data: (a) all invoices from Coaton Paint Co. for consignment shipments; (b) all entries in liability record for consignment shipments; (c) all payments to Coaton Co. for consigned goods; (d) consigned goods sold; and (e) consigned goods on hand, segregated as goods paid for and not paid for.

(5) Communicate directly with Coaton Paint Co. to confirm the record of shipments, payments, and balance owed or advanced.

(6) Review the schedule prepared in (4) above and appropriate supporting documents to determine whether contract terms have been fulfilled with respect to insurance of consigned goods, freight charges, allowances for advertising, etc.

b. Balance sheet adjustments may be required as follows:

(1) The accounts for inventory and payables should be reduced by excluding any amounts contained therein for consigned goods on hand but not paid for. Star Wholesale Co. does not own such goods and has no liability until a sale occurs.

(2) A receivable (advances to consignor) should be created for consigned goods on hand which have been paid for. Offsetting credit should be to inventory.

(3) A liability account should be created for consignment sales not yet remitted to the consignee.

c. To determine the causes and necessary corrective action with respect to the weakness in internal control which per-

mitted this situation to develop, the following steps are appropriate.

(1) Document control. The accounting department should receive copies of consignment contracts and all other contracts affecting financial and operating data.

(2) Serial numbering of purchase orders with separate identification of orders which relate to consignment contracts. Copies of all purchase orders should be sent to the accounting department, and appropriate symbols or "flags" used to identify those relating to consignment contracts.

(3) Approval of invoices for payment. The individual who approved for payment the invoices for consignment shipments appears to have been uninformed, careless, or incompetent. Careful review of the procedures for approval of liabilities is warranted by these circumstances.

(4) Accounts, reports, and procedures for control of consignment shipments and sales. Apparently the company has done nothing to establish control over goods handled on consignment. A complete set of instructions should be prepared setting forth the forms, procedures, accounts, and reports required for adequate internal control over this activity.

*Number 3 (Estimated time—15 to 25 minutes)*

In most medium-sized and large audits, it is customary for the auditor to select for detailed examination a series of items entered in the voucher register. The selection is from a period other than at year end.

*Required:*

a. What are the objectives or purposes of the vouching test?

b. Name the items for which each voucher is to be examined by the auditor performing this test.

*Answer 3*

a. In medium-sized and large audits, primary emphasis is placed upon evaluation of internal controls rather than verification of any substantial portion of individual items in the accounts. The purposes of the vouching test therefore are as follows:

(1) To determine whether the internal controls over expenditures are adequate and are being intelligently and consistently observed in daily practice.

(2) To establish the validity and dependability of the accounting records by verifying that properly prepared vouchers are on file to support the entries in the voucher register.

(3) To determine whether the distribution of charges is being made in accordance with generally accepted principles of classification.

b. The following items should be noted by the auditor in his examination of individual vouchers.

(1) Presence of serially-numbered purchase invoice and receiving report for each voucher.

(2) Supporting documents canceled to prevent duplicate submission.

(3) Signatures or other written evidence of approvals as to (a) agreement of quantities ordered and received, and prices contracted for and billed, and (b) clerical accuracy.

(4) Adequate description of expenditures on documents.

(5) Over-all reasonableness of prices paid.

(6) Over-all reasonableness of nature of expenditures and quantities purchased in relation to the size and nature of the client's business.

(7) Validity of the distribution of charges in relation to the client's accounting structure.

(8) Proper handling of sales taxes, freight charges, and discounts.

*Number 4 (Estimated time—20 to 30 minutes)*

Public accounting firms often develop and use a questionnaire to investigate and record their inquiries into the client's internal control system in order to determine whether there are weaknesses in internal control.

*Required:*

Prepare an internal control questionnaire pertaining to securities (short-term and long-term investments) held by a medium-sized manufacturing company.

*Answer 4*

Internal Control Questionnaire—Securities

1. Are securities under the control of a responsible official?
2. Are all persons having access to securities properly bonded?
3. Is an independent safe-keeping agent or custodian used? If so, are regular reports received?
4. Are all securities kept in a safe-deposit box?
   (a) Does access to the safe-deposit box require the presence of two or more officials?
   (b) Is a detailed record kept of all visits to the safe-deposit box?
5. Do the receipt and delivery of securities require approval of a responsible official?
6. Is a record maintained of all securities placed in and removed from the safe-deposit box?
7. Does the accounting department maintain a record of each security, its cost, description, scheduled income, and identifying certificate number?
8. Is the investment ledger regularly reconciled with the control account?
9. Are securities registered in the name of the company?
10. Are securities held for others as collateral or for other purposes properly segregated and kept under accounting control?
11. Are all purchases and sales of securities authorized by a finance officer or by a committee of the board of directors?
12. Are brokers' advices and other original papers evidencing purchase and sale of securities properly filed and available for inspection by auditors?
13. Is a satisfactory record of investment income maintained?
14. Are securities written off as valueless recorded in a separate account and periodically reviewed as to possibility of recovery?
15. Do write-offs of securities require approval of an appropriate official?
16. Are regular annual or quarterly reports on security investments and investment income prepared and presented to the board of directors?
17. Do internal auditors or other employees not responsible for custody of securities or record keeping periodically inspect the securities, confirm those held by outsiders, and reconcile the documents inspected or confirmed with the records?

*Number 5 (Estimated time—25 to 35 minutes)*

XYZ operates sales divisions in several cities throughout the country. In addition to other activities the sales divisions are charged with the collection of local receivables; each division maintains a bank account in which all collections are deposited intact. Twice a week these collections are transferred to the home office by check; no other checks are drawn on this bank account. Except for cash receipts and cash disbursements books no accounting books are kept at the sales offices, but all cash records are retained by them in their files.

As part of your year-end audit you wish to include an audit of cash transfers be-

tween the sales divisions and the main office. It is intended that your representative will visit all locations.

*Required:*

a. What are the purposes of the audit of cash transfers?

b. Assuming that your representative has a full knowledge of audit procedures for regular cash collection to which he will attend at each location, design ***only such additional specific*** audit steps as he will be required to perform to audit the cash transfers from each sales division to home office.

*Answer 5*

a. The purposes of the audit of cash transfers are as follows:

1. To establish that the company actually has the amount of cash shown by the balance sheet.
2. To evaluate the adequacy of the authorized internal controls over cash transfers, and to determine whether the authorized policies and procedures are being intelligently and consistently followed by all branches.
3. To bring to light any errors in the year-end cutoff and to determine the causes of any such inaccuracies.
4. To disclose any "kiting" or temporary "borrowing" of cash by personnel of the sales divisions or home office with special emphasis upon the timing of transfers and the corresponding entries in cash records of both sales divisions and home office.

b. Audit procedures specifically relating to cash transfers are as follows:

1. Reconcile the total collections during the year by each sales division with the total cash transfers.
2. Ascertain whether each sales division has in fact made cash transfers twice a week throughout the year.
3. On a random testing basis, prove the amounts of an appropriate number of transfers by reference to the collections of the days preceding each such transfer.
4. For the transfers tested in (3) above, trace the entry to the home office cash receipts book, to the remittance list or file in the home office, and to the bank deposit by the home office.
5. For the transfers tested in (3) above, compare the dates of checks issued by the sales divisions with dates of receipt by home office and perforation dates on checks. Investigate any significant delays and any transactions overlapping two accounting periods.
6. Review the paid checks and the cash disbursements book at each sales division to ascertain whether any disbursements have been made to payees other than the home office. Account for all check numbers used.
7. Prepare a schedule of cash transfers for a period of ten days or two weeks before and after the balance sheet date. (End of period tested should correspond with date of cutoff bank statement.) Account for all check numbers used, compare dates of checks with dates of entries in cash records, compare issuance dates on checks with perforation dates, and with dates on bank statements. Investigate significant discrepancies.
8. Discuss with managers of the sales divisions and with the home-office cashier any difficulties they may have encountered in following the established procedures for cash transfers.
9. Prepare a workpaper summarizing any apparent shortcomings in internal control and listing and evaluating any discrepancies disclosed.

*Number 6 (**Estimated time—25 to 35 minutes**)*

Races Corporation acquired a large tract of land in a small town approximately

10 miles from Capital City. The company executed a firm contract on November 15, 1958 for the construction of a one-mile race track, together with related facilities. The track and facilities were completed December 15, 1959. On December 31, 1959 a 6% installment note of $100,000 was issued along with other consideration in settlement of the construction contract. Installments of $50,000 fall due on December 31 of each of the next two years. The company planned to pay the notes from cash received from operations and from sale of additional capital stock.

The company adopted the double declining-balance method of computing depreciation. No depreciation was taken in 1959 because all racing equipment was received in December after the completion of the track and facilities.

The land on which the racing circuit was constructed was acquired at various dates for a total of $43,000, and its approximate market value on December 31, 1959 is $60,000.

Through the sale of tickets to spectators, parking fees, concession income, and income from betting, the company officials anticipated that approximately $175,000 would be taken in during the typical year's racing season. Cash expenses for a racing season were estimated at $123,000.

You have made an examination of the financial condition (balance sheet audit) of Races Corporation as of December 31, 1959. The balance sheet as of that date and statement of operations follow.

*RACES CORPORATION*
*BALANCE SHEET*
*December 31, 1959*
*ASSETS*

| | | |
|---|---|---|
| *CASH* | | $ 14,500 |
| *ACCOUNTS RECEIVABLE* | | 1,000 |
| *PREPAID EXPENSES* | | 7,500 |
| *PROPERTY* (at cost): | | |
| Land | $ 43,000 | |
| Grading and track improvements | 68,200 | |
| Grandstand | 100,000 | |
| Buildings | 60,000 | |
| Racing equipment | 40,000 | 311,200 |
| *ORGANIZATION COST* | | 300 |
| Total Assets | | $334,500 |

*LIABILITIES AND STOCKHOLDERS' EQUITY*

| | |
|---|---|
| *ACCOUNTS PAYABLE* | $ 22,000 |
| *INSTALLMENT NOTE PAYABLE—6%* | 100,000 |
| *STOCKHOLDERS' EQUITY:* | |
| Capital stock, par value $1 per share, authorized 200,000 shares, issued and outstanding 47,800 shares | 47,800 |
| Capital in excess of par, representing amounts paid in over par value of capital stock | 174,700 |
| Retained earnings (deficit) | (10,000) |
| Total Liabilities and Stockholders' Equity | $334,500 |

RACES CORPORATION
STATEMENT OF OPERATIONS
*For the Period from Inception, December 1, 1956 to December 31, 1959*

| | |
|---|---|
| *INCOME* | |
| Profit on sales of land | $ 5,000 |
| Other | 100 |
| | $ 5,100 |
| *GENERAL AND ADMINISTRATIVE EXPENSES* | 15,100 |
| Net loss for the period | $10,000 |

On January 15, 1960 legislation which declared betting to be illegal was enacted by the state legislature and was signed by the governor. A discussion with management on January 17 about the effect of the legislation revealed that it is now estimated that revenue will be reduced to approximately $48,000 and cash expenses will be reduced to one-third the original estimate.

*Required (Disregard federal income tax implications)*:

a. The explanatory notes to accompany the balance sheet.

b. The most comprehensive auditor's *opinion* covering the balance sheet. The *scope* paragraph should be *omitted* and the opinion dated February 1, 1960.

c. If the report is in any way qualified as to opinion, give an explanation of your reasons for the qualification.

*Answer 6*

a. RACES CORPORATION
NOTES TO FINANCIAL STATEMENTS
*December 31, 1959*

Note 1. The construction of the race track and related facilities by the company were completed on December 15, 1959 with the expectation of beginning regular operations in 1960. However, on January 15, 1960, legislation was enacted by the state declaring betting to be illegal. Although the adverse effect of this legislation is expected to curtail substantially the level of operations, management presently estimates that revenues for 1960 will nevertheless be slightly above expected expenses other than depreciation.

Note 2. Land and Other Property

The land and other property are stated in the balance sheet at cost. Current market value of the land is estimated to be $60,000. The likelihood of the corporation being able to recover the cost of the other types of property is, however, open to serious question because of the January, 1960 legislation rendering betting illegal. The difficulty of recovering the costs of the depreciable property is aggravated by the specialized nature of the facilities.

The double-declining balance method of depreciation has been adopted by the corporation; however, no depreciation was recorded in 1959 because plant facilities were not completed until late in December, 1959 and were not placed in operation in that year.

Note 3. Installment Note Payable

The note payable provides for two installment payments of $50,000 each on December 31, 1960 and December 31, 1961 respectively.

b. To the Board of Directors, Races Corporation:

Because of the legislation passed in January, 1960 declaring betting to be illegal (as described in Note 3), and the adverse effect thereof upon the planned operations of the company, we cannot express an opinion as to the fairness with which the accompanying balance sheet presents the financial position of the company at December 31, 1959. In our opinion, however, the individual items of cash, accounts receivable, prepaid expenses, cost of operating property, cost of organization, accounts payable, installment notes payable, and amounts of capital contributed by stockholders were presented fairly as of December 31, 1959.

A, B, AND COMPANY
Certified Public Accountants

c. Explanation of Reasons for Disclaiming an Opinion.

The legislation declaring betting to be illegal has substantially and adversely affected the prospects for operation of the company along the lines anticipated in forming it. Present estimates of 1960 operations indicate that the company cannot accumulate sufficient cash to meet the required payment of $50,000 on the installment note payable due December 31, 1960. The difficulties of meeting this liability through sale of additional stock are quite apparent in view of the restricted scope of the operations. The impending financial crisis and the difficulty (see Note 2) of making alternative use of the specialized physical facilities render meaningless any expression of opinion on the overall financial position of the company. However, a "piece-meal" opinion concerning the costs and stated amounts of individual items on the balance sheet may reasonably be given.

*Number 7 (Estimated time—20 to 30 minutes)*

You have found from past experience that a number of your clients carry either a coinsurance type or the reporting type contents fire insurance. Frequently they have found upon the occurrence of a loss that they suffered a larger loss than expected because of being underinsured.

*Required:*

a. Explain and illustrate the difference between a 90% coinsurance contents fire policy and a reporting type contents fire policy.

b. Prepare a list of items that cause underinsurance on a contents policy insuring against losses from fire.

*Answer 7*

a. A 90% coinsurance contents fire policy requires the insured to maintain insurance coverage equal to or in excess of 90% of the insurable value of the property. If the insurance coverage maintained is less than the stipulated percentage, the insured shares the risk with the insurance company and must absorb a portion of the loss on even a small fire loss. The portion of the loss recoverable is equal to the ratio of actual insurance coverage to required coverage. A reporting type contents fire policy requires continuous insurance coverage equal to the full insurable value of the property. Any deficiency in the amount of coverage will cause the insured to bear a portion of the loss as in the case of failure to meet a coinsurance clause requirement. The liability of the insurance company is measured by applying to the loss a fraction of which the numerator is the last reported value and the denominator is the actual value at the report date. Under no circumstances does the liability of the insurance company exceed the amount of the actual loss.

b. Items Which May Cause Underinsurance

1. Inadequate inventory records and controls.
   - (a) Lack of perpetual inventory records.
   - (b) Infrequent and/or incomplete physical inventories.
   - (c) Movement of inventory from one location to another resulting in inadequate insurance coverage at a specific location.
   - (d) Failure to record location of inventory.
   - (e) Failure to record movement of inventory.
   - (f) Charging of supplies to expense at time of acquisition.
   - (g) Failure to record receipt of goods held for others.
   - (h) Failure to record goods in receiving department.
   - (i) Absence of records reflecting seasonal increase in stock.
2. Price-level changes
   - (a) Increase in market value of inventory.
   - (b) Increase in market value of fixtures.
   - (c) Basing insurance coverage on obsolete cost data.
3. Miscellaneous
   - (a) Expiration of one or more policies prior to renewal.
   - (b) Reluctance to incur cost of full coverage.
   - (c) General and administrative costs of receiving, marking, and handling merchandise.
   - (d) Merchandise on hand sold but not delivered.
   - (e) Tendency to keep insurance coverage constant despite growth in size of business.

AMERICAN
ACCOUNTING
ASSOCIATION

# NEWS

EDITOR'S NOTE

This section of THE ACCOUNTING REVIEW is designed to bring more information about the Association and its activities to the general membership. Any thoughts or suggestions you may have or any news items for subsequent issues should be forwarded to R. K. Mautz, 218 David Kinley Hall, University of Illinois, Urbana, Illinois.

## PRESIDENT'S MESSAGE

In 1961, the American Accounting Association becomes 44 years of age. By some standards the organization is middle aged, but in terms of growth and activity it seems to be in the prime of youth, enjoying health and vigor. This robust condition is the result of the combined efforts of many thousands of members who have served the Association in a variety of ways over nearly half a century.

The year ahead gives promise of continuing progress. Over 300 members have accepted invitations to contribute their energies and talents to the organization's activities for 1961. Most of these people will be serving in one of the twenty-five committees that will be functioning this year. Many others will actively participate in the annual meeting or in one of the regional meetings. A few will be continuing their editorial efforts to maintain the high standards that characterize the ACCOUNTING REVIEW. Not included in the above count are the dozens who will contribute to the magazine during the year.

The 1961 Convention will be held in Austin, Texas, August 28–30. Plans for this important event are already well under way. The technical portion of the meeting promises to be stimulating, and the social portion entertaining. The University of Texas, host to the Convention, is providing comfortable, air-conditioned quarters on its spacious and attractive campus for living, dining, and meeting.

For the American Accounting Association, 1961 looks like a great year.

A. B. CARSON

## FELLOWSHIP FUND RECEIVES CONTRIBUTIONS

Two substantial contributions to the AAA Fellowship Fund were accepted on behalf of the Association by President Charles J. Gaa at the annual meeting in Columbus.

John P. Goedert, executive partner of Alexander Grant & Company, presented a check for $5,000 contributed by his firm. Mr. Goedert called the contribution "a business investment in the future of our profession." He cited recent surveys indicating a shortage of qualified accounting teachers despite large enrollments of students in accountancy and increasing demands for trained accountants by industry, government, and public accounting firms.

Nolan E. Williams, as national president of Beta Alpha Psi, the honorary accounting fraternity, presented a check for $1,000 as a contribution from that organization indicating its interest in supporting accounting education.

The Fellowship Fund annually makes grants to carefully selected graduate students working toward doctoral degrees and careers as teachers of accounting. It was established by a grant from Haskins & Sells Foundation. Additional contributions to assure continuance and to provide expansion of this important AAA activity are encouraged.

## EXECUTIVE COMMITTEE ACTION

At its meeting in Columbus on August 28 and 29, 1960, the Executive Committee took the following actions which may be of special interest to members:

1. Accepted the resignation of R. Carson Cox as Secretary-Treasurer to become effective August 31, 1960, and appointed Paul H. Walgenbach to serve in that office for the period September 1 to December 31, 1960. In connection with Carson's resignation, the following resolution presented by Martin Black was unanimously approved:

"Since 1954 Carson Cox has very ably served the American Accounting Association as its Secretary-Treasurer. He has given generously of his time and energy. His financial honorarium has been simply a token of our appreciation. Therefore, I move that at this meeting of the Executive Committee we go on record as expressing our appreciation to Carson Cox for services far beyond the call of duty."

2. Approved an organization plan proposed by the Joint Advisory Council on Developing Student Interest in Accounting, subject to final determination of details. The plan calls for the establishment of 72 task groups throughout the country composed of representatives of the AAA, AICPA, Controllers Institute of America, Institute of Internal Auditors, and NAA. These task groups will work at the local level and attempt to interest high school students in education and careers in accounting. Funds to support their efforts will be solicited by the Joint Advisory Council and will be controlled and disbursed through the AAA.

3. Recommended that The Accounting Review no longer publish abstracts of doctoral dissertations in accounting and the annual lists of accounting research projects. A list of titles of doctoral dissertations completed will be published. The increasing number of acceptable manuscripts, the limited usefulness of abstracts, and increasing costs of publication led to this decision.

## AICPA ANNOUNCES ADDITIONAL RESEARCH PROJECTS

The accounting research division of the AICPA has added two items to its active research agenda: Accounting for the Costs of Pension Plans, and "Cash Flow" Statements and Analysis. Anyone interested in submitting comments, suggestions, or other material for the use of the research staff is invited and urged to do so. Advance notice of the intent to participate in the projects in this way will be appreciated. All correspondence relating to the studies should be addressed to Mr. Maurice Moonitz, Director of Accounting Research, American Institute of Certified Public Accountants, 270 Madison Avenue, New York 6, N. Y. A description of the two projects follows.

Accounting for Costs of Pension Plans. Previous announcements on this subject were made by the committee on accounting procedure, the latest ones being Chapter 13(a) of ARB No. 43, Pension Plans—Annuity Costs Based on Past Service, issued in 1953, and ARB No. 47, Accounting for Costs of Pension Plans, issued in 1956. The new research project will explore the subject more thoroughly than was possible in the past, and will include a review of the existing bulletins. The study may be explanded to include other post-employment or retirement compensation arrangements. This project will be under the specific direction of Mr. Alexander Russ, Research Supervisor, of the staff of the accounting research division.

"Cash Flow" Statements and Analysis. For many years the literature of accounting has included the preparation of financial statements under the title of "statements of source and application of funds" or some similar characterization. The study will include a survey of practice in the use of such statements, a critique of the form of presentation, and a consideration of the function of this type of financial exhibit.

More recently, financial analysts and others have experimented with revised earnings figures to put them on a "cash flow" basis. The study will explore the possibility of making adjustments and analyses of this sort which will be useful, as well as pointing out any dangers in the misuse of such data. The research on this project will probably not extend into the area of cash budgeting or similar managerial problems. It will be focused, instead, upon the information provided for stockholders, investors, and others interested in the annual reports of corporations and other business enterprises.

This project will be under the specific direction of Mr. Perry Mason, Associate Director of Accounting Research.

## FELLOWSHIP APPLICATIONS DUE MARCH 1

Applications for AAA fellowships are due in the office of the Secretary-Treasurer by March 1, 1961. For details, see announcement on page 178 of this issue.

## FGAA APPOINTS SPECIAL COMMITTEE

Aiming to bring university instruction more closely in harmony with financial management progress in the government, a Committee on Relationships with Universities has been organized by the Federal Government Accountants Association. The committee, which includes deans or professors from several universities as advisory members, will develop conferences, study programs, and research activities wherein faculty personnel and government officials can collaborate on subjects of mutal interest relative to governmental financial administration. Stimulation of interest among university graduate students in embarking on Federal careers is another committee objective, according to the chairman, Frank Higginbotham, assistant comptroller, U. S. Government Printing Office.

Dean Paul M. Green (U. of Illinois) who participated in the organizational meeting of the committee, envisioned a series of roundtable discussions jointly sponsored by chapters of the FGAA and colleges in their vicinity. The interchanges among government officials and faculty personnel which result from the committee's program may provide guidance for universities contemplating the introduction of courses in Federal financial management in the opinion of Andrew Barr, Chief Accountant, SEC.

In addition to Dean Green and Mr. Barr, advisory members of the new committee include: Orton Boyd (American U.), Walter F. Frese (Harvard U.), Willard J. Graham (North Carolina U.) Eric L. Kohler (Ohio State U.), John Arch White (U. of Texas), Wayne E. Shroyer (U. of Denver), Ralph Dale Kennedy (George Washington U.), Jerome J. Kesselman (U. of Denver), Asel R. Colbert (U. of Wisconsin), Martin L. Black, Jr. (Duke U.), Roy B. Easton (George Washington U.), and T. Jack Gary, Jr., Richmond, Va.

Regular members of the committee include T. R. Larimore, Department of Health, Education and Welfare; William D. Patrick, Department of Defense; Frederic K. Rabel, General Accounting Office; Samuel Rothstein, State Department; Kenneth L. Smith, Federal Power Commission; George A. Gustafson, General Accounting Office; Milford K. Kellogg, Atomic Energy Commission; and James O. Eaton, Army Audit Agency, secretary.

Serving in ex-officio capacity are Raymond Einhorn, National Aeronautics and Space Administration, national president of FGAA; John C. Cooper, Jr., Department of Agriculture, national vice president of FGAA; Stancil M. Smith, Post Office Department, chairman of the national FGAA committee on education; and Martin C. Powers, executive secretary-treasurer, FGAA.

Establishment of a joint committee of members of the FGAA and AAA as a further step to cement relationships between government financial administrators and university faculty members was foreseen by Mr. Einhorn.

## ILLINOIS TEACHERS HOLD CONFERENCE

A two-day conference on accounting education for teachers in colleges and universities in Illinois was held November 18 and 19 on the campus of the University of Illinois under the direction of a committee consisting of A. G. Mehl (Bradley U.), E. C. Strobel (De Paul U.), and W. E. Thomas (U. of Illinois).

Subjects for the three panel discussions and participants were as follows:

(1) "Objectives of Accounting Education"—Maybelle Kohl (Elmhurst C.), Thomas Hilliard (De Paul U.), Ralph Swick (Southern Illinois U.), and W. E. Thomas, chairman.
(2) "Content of the First-Year Course"—H. A. Nicholaus (Lake Forest C.), John Ruble (Bradley U.), S. W. Specthrie (Roosevelt U.), and E. C. Strobel, chairman.
(3) "Curriculum of Accounting Majors"—R. I. Dickey (U. of Illinois), Robert Meier (Loyola U.), Ambrose Reiter (Northwestern U.), and A. C. Mehl, chairman.

Mr. Fred Horn of Arthur Young & Company gave the banquet address on Friday evening.

## PERRY MASON RECEIVES ACCOUNTING AWARD

Perry Mason, Associate Director of Accounting Research, AICPA, and a past president of the AAA is the recipient of the Alpha Kappa Psi Foundation's Award for Distinguished Service in Accounting for 1960. He was selected for the honor by a committee composed of Edward G. Eriksen (Wayne State U.), S. Paul Garner (U. of Alabama), and Glen G. Yankee (Miami U., Ohio).

The Alpha Kappa Psi Foundation makes this award annually to an individual selected by a special committee of accounting educators. Previous recipients of the award are: Maurice H. Stans, 1952; W. A. Paton, 1953; A. C. Littleton, 1954; Carman G. Blough, 1955; Donald P. Perry, 1956; H. A. Finney, 1957; Eric L. Kohler, 1958; H. T. Scovill, 1959.

## COMPUTER CHARACTERISTICS CHART

Charles W. Adams Associates, a firm of electronic data processing consultants, has issued a unique chart which catalogs the salient features of forty-three U. S.-built, general-purpose, stored-program, electronic digital computers. All the data in this pocket-size chart, which consists of twelve accordion-folded pages, have been confirmed by the sixteen manufacturers whose computers are included.

Among the twenty-two headings in the chart are the average monthly rental, storage capacity and type, word size, instruction addresses, internal speeds, magnetic tape data, peripheral equipment, and such special features as index registers, indirect addressing, and others. The chart is described as being, for its size, "probably the most meaty, up-to-date chart available on computer characteristics." The company plans to publish occasional supplementary sheets describing new computer systems as well as any important changes in those already listed.

Copies of the chart are available to members of the AAA for personal purposes or in quantity for class use. Write to Charles W. Adams Associates, 142 the Great Road, Bedford, Massachusetts. There is no charge for the charts or the supplements.

## NATIONAL DEFENSE STUDENT LOAN PROGRAM INFORMATION

The National Defense Student Loan Program authorized by the National Defense Education Act now has approximately 1,400 participating colleges and universities. This program provided approximately 60 million dollars of loans to college students during the year ended June 30, 1960. A large proportion of the participating schools have had no previous loan activities and many more have never reported financial data to the Federal Government. In many cases the individual selected to compile the report or to maintain the financial records has a minimum knowledge of accounting or financial record keeping.

The Student Loan Section is issuing a new section to the Manual of General Information and Instructions for the National Defense Student Loan Program. This Section includes instructions for filling out Cumulative Reports of National Defense Student Loan accounts and recommends very simple accounting records and procedures which may be adopted by participating institutions or adapted to other local accounting procedures. The membership of the AAA may be able to make a contribution to this program by volunteering to assist the local college authorities in the interpretation of the accounting requirements of the program. Any member willing to volunteer this assistance may receive a copy of the pertinent material by addressing a request to Dr. T. R. Larimore, Program Officer, Student Loan Section, Division of Higher Education, Office of Education, Washington 25, D. C.

## PETROLEUM ACCOUNTING CONFERENCE

The Sixth Annual Petroleum Accounting Conference will be held Friday, April 28, 1961, in Wichita, Kansas. The conference is sponsored by the Wichita Chapter of the Petroleum Accountants' Society of Kansas, The Wichita Chapter of NAA, the Wichita Chapter of the Kansas Society of CPAs, and the College of Business Administration of the University of Wichita.

Communications concerning the conference may be directed to the general chairman, Carl Hurty, Petroleum Incorporated, 352 N. Broadway, Wichita, Kansas; or to the Secretary, Leo A. Poland Accounting Department, University of Wichita, Wichita, Kansas.

# Executive Committee For 1961

President:

A. B. Carson, University of California, Los Angeles

President-Elect:

Raymond C. Dein, University of Nebraska

Vice Presidents:

Charles W. Bastable, Columbia University

Norton E. Bedford, University of Illinois

Donald J. Bevis, Touche, Ross, Bailey & Smart

Frank S. Kaulback, Jr., University of Virginia

Secretary-Treasurer:

Paul H. Walgenbach, University of Wisconsin

Editor:

R. K. Mautz, University of Illinois

Director of Research:

Samuel R. Hepworth, University of Michigan

Past Presidents:

Charles J. Gaa, Michigan State University

Martin L. Black, Jr., Duke University

C. R. Niswonger, Miami University (Ohio)

## ASSOCIATION NOTES

(EDITOR'S NOTE: Please address communications concerning Association Notes to the editor of THE ACCOUNTING REVIEW, 218 David Kinley Hall, Urbana, Illinois.)

### ALABAMA

*University of Alabama*

Robert B. Sweeney, after receiving a Ph.D. from the University of Texas, has joined the staff as associate professor. Thomas N. Humble is on leave of absence to study for a Ph.D. at the University of Texas. Joseph E. Lane spent the summer with the Alabama Department of Revenue working on a revision of the state income tax regulations.

A. J. Penz is serving as a member of the editorial board of the *Internal Auditor* and as editor of its Students Department. William C. Flewellen heads the publications committee of the Birmingham Chapter of the NAA as a member of the executive board. Frederick A. Brett spent the summer doing research in the Birmingham area in connection with Southern Case Writers. William H. Whitney spent the latter half of the summer with the New York office of Price Waterhouse & Co.

### CALIFORNIA

*Los Angeles State College*

George N. Francis is serving as head of the Accounting Department replacing Mary E. Murphy who resigned that position because of heavy research commitments. She spent the summer in Europe attending international meetings and visiting advanced management courses.

David Jenkins and John McLaren won Ford Foundation Fellowships for the summer session, 1960, at UCLA. Joseph De-Reyna III passed the CPA examination.

*Orange County State College*

Theodore H. Smith, formerly Dean of the Graduate School of business at the Air Force Institute of Technology, Air University, Dayton, Ohio, has been appointed chairman of the Division of Business Administration and Economics. David H. Li, formerly on the staff of the University of Southern California, has been appointed an associate professor.

*University of California, Los Angeles*

Alan Drebin and G. Edward Philips joined the staff September 1. W. E. Karrenbrock is on sabbatical leave in Japan studying the impact of inflation on accounting in that country.

In September, 1960, a five-year program leading to an MBA degree for students preparing for a career in public accounting was inaugurated. The course of study involves a little less accounting in the undergraduate years than formerly, with a concentration upon professional study in the graduate year.

### COLORADO

*University of Colorado*

William M. Slocum, who recently received a Ph.D. from The Ohio State University, has joined the staff as an assistant professor. Joseph Bachman is teaching accounting in Finland on a Fulbright Fellowship.

Robert Wasley has been named Chairman of the Division of Accounting. Vinton Curry has just completed revision of the Level II Aptitude Examinations for the AICPA.

The Seventh Annual Accounting Institute, sponsored by the School of Business of the University of Colorado and the School of Commerce and Industry of the University of Wyoming was held on the University of Colorado campus October 11.

*University of Denver*

A new program provides students in accounting with an Associate Membership in the Colorado Society of CPAs on payment of a two dollar fee. This entitles the student to notices of all meetings of the Society and to participate in its programs. Students are invited to two dinner meetings of the Association during the year as guests of the Society. Before such meetings they are invited to visit the offices of members for an introduction to public accounting.

Under the terms of the new Colorado accountancy law, a person who obtains a Master's degree from an approved university and meets certain requirements as to hours in various fields and who passes the examination may receive his certificate without fulfilling any experience requirement.

### DISTRICT OF COLUMBIA

*The American University*

Harry Rosenthal has been appointed associate professor. Laura Karadbil has been promoted to assistant professor. Seymour Kaufman has been appointed associate professor.

### FLORIDA

*Florida State University*

Ross Heck received a Ph.D. degree from Louisiana State University in August, 1960. He is currently serving as treasurer of the Tallahassee Chapter of the Florida Institute of CPAs. John E. Champion received a Ph.D. degree from the University of Michigan in January, 1960. He has been appointed Assistant Dean of the School of Business, Florida State University.

Gibbes U. Miller recently received a Florida CPA certificate. He is engaged in collecting case materials for a fifth-year course in problems of professional accountancy under a grant made by the R. Warner Ring Educational Foundation of the Florida Institute of CPAs.

Luella Richey, the first Florida woman CPA, retired in June after 43 years of teaching at Florida State University and its predecessor, Florida State College for Women.

### GEORGIA

*The University of Georgia*

Rudolph Skandera and Salvatore Gilarde have joined the staff as assistant professors. James Baker is on leave studying for the doctorate at the University of Southern California. John W. Pate is on leave studying for the doctorate at Columbia.

Elementary accounting is being given for the third year over closed circuit TV with over 400 students in the course.

### ILLINOIS

*De Paul University*

Edwin Cohen has returned after a year's leave of absence during which he received a Ph.D. degree from Michigan State University. Russell Bowers has accepted a two-year appointment on a Ford Foundation project at Gadjah Mada University at Jogjakarta, Indonesia. Arthur I. Farber has been promoted to assistant professor.

*Loyola University*

Martin E. Drebin is serving on the Educational Standards Committee of the Illinois Society of CPAs. Robert A. Meier is a member of the Auditing Procedure and Accounting Principles Committee of that organization and is also a director of the Chicago Control of the Controllers Institute. Robert J. Lill of the accounting faculty received the Sells award for the highest grade on the May, 1960 CPA examination.

*Southern Illinois University*

Roy W. Richards, Jr., formerly at St.

Louis University, has joined the staff as an associate professor. Leo M. Favrot, formerly with the Panama Canal Company, has also joined the faculty as an associate professor.

*University of Chicago*

George Sorter was visiting professor at the University of California (Berkeley) and Sidney Davidson at the University of Hawaii during the summer. Sidney Davidson also served as a member of the Commission of Enquiry on the Financial Condition of the Sugar Industry of Antigua.

Carl T. Devine has joined the faculty as a visiting professor and Jacob Birnberg, formerly of the University of Minnesota, as an instructor.

*University of Illinois*

V. K. Zimmerman is teaching at the Hochschule für Welthandel, Vienna, Austria on a Fulbright. W. E. Thomas attended the Case Study Seminar at Harvard University during the summer. D. H. Skadden served on the CPA examination grading staff, AICPA, and attended the Faculty Seminar in New Developments in Business Administration at the University of California in Berkeley during the summer.

Hershel Anderson has accepted a position as assistant professor at the University of Texas. Wallace Kelly is now an instructor at Eastern Illinois University. Mervyn Wingfield has accepted a position as assistant professor at the University of Richmond. Harold Arnett has joined the Accounting Research Staff of the AICPA.

C. H. Griffin has been promoted to professor, P. E. Fess to assistant professor, and Wayne Higley to instructor.

New instructors employed in the fall of 1960 are W. B. Barrett, H. N. Lunn, and T. R. Prince. New part-time assistants are G. H. Brieske, N. Dopuch, W. H. Galliart, R. V. Hartley, W. A. Johnson, G. A. Luing, D. G. Pozgai, W. C. Reyn. D. V. Stuchell, and J. A. Trine.

INDIANA

*Indiana University*

Robert R. Milroy and Leon E. Hay conducted sessions in income taxation and budgeting recently at the Management Development Conference for National Tuberculosis Association Executives. L. Vann Seawell recently conducted the course in accountants' fees for the Indiana Association of CPAs and Samuel Frumer was the instructor in the budgeting course for the same organization.

IOWA

*University of Iowa*

The seventh annual Tax and Accounting Seminar, sponsored jointly by the University of Iowa's Department of Accounting and the Iowa Society of CPAs, was held in Iowa City on October 13 and 14. Among the participants were Leo Herbert, Washington D. C., and Elmer G. Beamer, Cleveland, Ohio. Billy L. Barnes was in charge of the conference.

Gilbert P. Maynard served as moderator of a panel discussion on "Recent Studies on Business Education" at the annual meeting of the Association of CPA Examiners in Philadelphia.

William J. Burney became professor emeritus July 1 after forty years on the University of Iowa faculty. Daniel L. Sweeney has resigned to accept the position of Director of Education, Midwest Region, with Peat, Marwick, Mitchell & Co.

KANSAS

*University of Kansas*

Sherwood W. Newton attended the Faculty Seminar on New Developments in Business Administration at the University of California, Berkeley. Wiley S. Mitchell, Associate Dean of the School of

Business, has returned from a year's participation in the IMEDE Program at Lausanne, Switzerland.

Howard F. Stettler has been elected First Vice President of the Association of CPA Examiners and is on leave for the fall, 1960, semester in connection with writing activities. Richard H. Lashley has resigned to accept a position with Peat, Marwick, Mitchell & Co. in Los Angeles.

First enrollments have been accepted for the fall 1960 semester in the new professional year of study in accounting, leading to the degree of Master of Science in Accounting.

### MISSOURI

*University of Missouri*

Donald L. Richard has been promoted to associate professor. He attended the Ford Foundation Seminar in New Developments in Business Administration at the University of California (Berkeley) last summer. Joseph A. Silvoso attended a Ford Foundation regional conference on higher education for business at Stillwater, Oklahoma, early in 1960.

Wilbur C. Haseman and Robert L. Kvam from Syracuse University and Michigan State University respectively have joined the staff as associate professors of accounting. Henry M. Steele, formerly with IBM in Indianapolis, has also joined the staff as an associate professor.

Royal D. M. Bauer retired last August with the emeritus title after thirty years of service, including sixteen as Chairman of the Department of Accounting and Statistics. Frederick Everett has left to join the accounting faculty of Western Michigan University at Kalamazoo.

### NEW YORK

*Columbia University*

Louis H. Jordan, formerly at Tulane University, has joined the staff as an associate professor.

### PENNSYLVANIA

*The Pennsylvania State University*

G. Kenneth Nelson attended the Ford Foundation Seminar on New Developments in Business Administration at the University of California, Berkeley. He has been appointed to a three-year term as a member of the Committee on Research Planning of the NAA and as a member of the Committee on Relations with Schools and Colleges of the Pennsylvania ICPA.

Anthony J. Mastro has been promoted to associate professor. The Sixth Annual Accounting Study Conference, sponsored by the Pennsylvania ICPA and the College of Business Administration was held on the campus August 21–24, 1960. The Fourteenth Annual Tax Seminar sponsored by the College of Business Administration was held on campus on May 15–18, 1960.

Beta Theta Chapter of Beta Alpha Psi was established at Pennsylvania State in the fall of 1960. The University will move from a two semester plus summer session system to a modified quarter system, ten weeks per quarter, effective June 15, 1961.

### TEXAS

*University of Houston*

Samuel M. Woolsey assumed the duties of Chairman of the Accounting Department effective June 1, 1960. I. E. McNeill is on leave for the current academic year to complete a televised accounting lecture series under a grant from the Ford Foundation. Paul W. Lindloff, Jr. is on leave for the current academic year to work on a doctorate at the University of Texas.

# BOOK REVIEWS

WENDELL P. TRUMBULL, *Editor*

## *Accounting*



## *Finance*

## *Accounting*

ROBERT N. ANTHONY, *Management Accounting*, Revised Edition (Homewood: Richard D. Irwin, Inc., 1960, pp. xxi, 671, $7.50)

The first edition of this book, published in 1956, was divided into two basic parts. In the first half of the book, accounting principles and techniques were discussed. The last half of the book dealt with the uses of accounting information by management. The author has now expanded the material on accounting fundamentals and has divided the last half of the book into two sections labeled "Management Accounting for Control" and "Management Accounting for Planning." In the first edition a distinction was made between control and planning, but this distinction is brought out more clearly in the revised edition.

Basic changes in organization and content have been made by (1) the elimination of the chapter dealing with frequency distribution and averages, (2) the division of the chapter on accounts receivable and fixed assets into two chapters, (3) the addition of a separate chapter on the price level problem, (4) the addition of a chapter dealing with new horizons in managerial accounting, and (5) some shift in the chapter order. Throughout the first part of the text the original material has been expanded to some extent, and new topics have been added. Control accounts and subsidiary ledgers, consolidated statements, various depreciation methods, fixed asset trade-ins, depletion, wages and salaries, and pensions are discussed for the first time in this edition. Accounting principles and the accounting process in general are taken up in both editions without getting into the mechanics of bookkeeping.

In connection with the price level problem, the author gives an interesting and informative presentation of inventory cost flows, giving arguments both for and against the Lifo method. A case at the end of the chapter, R. L. Boggs, illustrates how a change in the price level can affect the individual investor. This case should prove to be quite useful as a starting point in classroom discussion of the price level problem.

Funds flow and cash flow statements are given considerable attention with material being added to show how the funds flow statement is prepared. The author is to be commended for his lucid explanation of how changes in balance sheet accounts are related to the flow of funds. A T-account approach is used instead of the conventional working paper presentation found in so many texts.

The chapter on planning capital acquisitions stands out in the mind of the reviewer as a strong chapter in both editions. It is well-organized and clearly written. In this edition, reference is made to the MAPI method and the profitability index method of analysis. The teacher who has used this text will be pleased to find that Standeen Manufacturing Company and Phillips Laundry have been retained as cases in this edition and that several new cases have been added.

In the chapter on new horizons in managerial accounting, the author is understandably cautious in making any predictions. He points out various topics of interest and recommends that the reader take steps to keep informed as time passes. The use of automatic computers for data processing and problem solving is discussed to some extent along with the use of probability analysis, mathematical models, linear programing, and the theory of business games.

The text material is brief with various topics being brought to attention but not discussed at any length. This is intentional because the student is expected to use the book as a guide, reading other material as necessary to add to his background. A teacher who uses this book may want to suggest readings, or he may prefer that the individual members of his class take the initiative in this respect as they see fit. Most likely the teacher will have to adapt his approach to the sophistication of his class. There are no discussion questions, exercises, or problems; but there are many cases. The book will be particularly appropriate where the case method of instruction is used. The first ten chapters deal with financial accounting. Basic accounting records and systems are taken up in one chapter following an introduction, a discussion of basic accounting concepts, and a chapter on income measurement. In the rest of this section, material is given on accounts receivable, fixed assets, income measurement in manufacturing, the equity structure, the price level problem, and a review of financial accounting. The next five chapters in the section on control deal with statement analysis, funds flow, control concepts, cost accounting, and various analyses. The final four chapters of text in the planning section are on budgeting, alternative courses of action, planning capital acquisitions, and new horizons in management accounting.

An interesting treatment of the learning curve appears in an appendix following a case involving an aircraft company and a subcontractor, Lacklin Aircraft Company. The text with its accompanying cases, many of them new, will probably prove to be particularly useful for classes of mature students. This book should be well received.

CARL L. MOORE
Associate Professor of Accounting
*Lehigh University*

HARVEY CARDWELL, *The Principles of Audit Surveillance*, (Princeton, New Jersey: D. Van Nostrand Company, Inc., 1960, pp. x, 450, $9.00).

*Principles of Audit Surveillance* represents the culmination of many years of extensive study and consideration of the phenomena of "inside theft." For the uninitiated, "inside theft" is Cardwell's term for the broad variety of acts encompassed by embezzlement, defalcation, fraud, larceny, and similar actions when they involve the immoral appropriation of an employer's assets by an employee. The prospective reader should be warned that this is not a frothy account of a series of inside theft cases, suitable for a pleasant winter evening's reading. Although the book is well documented with actual instances of the many forms of inside theft

and attendant manipulations of records, it is primarily a serious, scholarly study of the general subject.

In approaching his subject, Cardwell first addresses himself to outlining the full range of possibilities for inside theft, including the accompanying manipulations that may be undertaken to conceal such thefts. These matters are carefully and extensively described and classified and are generously illustrated with references to published or personally known instances of inside theft. In classifying and describing the details of his subject, Cardwell has found it desirable to coin many new terms and to attribute special meanings to existing terms. The resulting superstructure becomes so complex that the author has wisely included a glossary of terms that numbers 163 entries.

To this reviewer, it seemed that Cardwell was unnecessarily thorough in his efforts to classify the multitude of inside theft possibilities into meaningful categories and in the development of his own terminology. Intense concentration is required of the reader in making his way through the some 200 pages devoted to the descriptive aspect of the subject. An excerpt from pages 72-3 of the book may serve to illustrate the point:

"Complements are the inescapable and indestructible debris of thefts. They come into existence simultaneously with the theft and initially rest in the theft-incidence accounts (except in the manipulative thefts, when the movement of the complement from the theft-incidence account is necessarily simultaneous with the resting of the functional fraudulent credit in such account, which latter is the theft act). When the complement rests in the theft-incidence account or when the complement has been transferred to, and rests in, any other real account, a thief may attempt to evade discovery by either of three courses: (1) He may depend on the account-inventory discrepancy being misinterpreted as a normal inventory variation or as the result of errors. (2) He may manipulate the inventories to conceal the existence of the account-inventory discrepancy. (3) He may eliminate the account-inventory discrepancy by transferring the complement from the involved real account."

The term "complement" appears extensively throughout the book and has been chosen by Cardwell to identify a basic principle: the fact that under double-entry bookkeeping, every theft loss results in a debit to net worth, whether recorded or unrecorded, and the identification of a complement as it rests temporarily or permanently in some account is a key step in disclosing the existence of some form of inside theft.

Cardwell devotes very little space to internal control and other methods of preventing theft, since he feels that this aspect of his subject is adequately covered in other references. He does, however, make a very interesting observation about fidelity bonds, which are part of the area of internal control, under his general heading of the effect of theft and manipulation on financial statements. He points out that where theft losses have occurred in the past and the complements have already been absorbed in the owner's equity account (usually by way of an income statement account), discovery of the theft and recovery from the insurance company is largely a form of "windfall." The author advocates eliminating recovery of windfalls and applying the related insurance premiums to protection against deferred complements, which are more serious because they misstate asset or liability accounts and may conceal a condition of bankruptcy, to the greater injury of both creditors and owners.

The purpose of the first part of the book is to lay the ground-work for the second part, which sets forth Cardwell's recommendations for the practice of what he refers to as "audit surveillance"—examining accounts and records for the purpose of detecting the existence of complements, fraudulent credits, and conversions. This is an area, he points out, which was once the principal concern of auditors, but fell into neglect with the growth in importance of the auditor's expression of an independent opinion on financial statements. Consequently, surveillance techniques have not developed and advanced as have the techniques of financial audits, and Cardwell's principal goal has been to advance the state of the art in surveillance techniques, largely on the basis of his outline of the techniques of inside theft.

Surveillance techniques are not, he points out, mere extensions of what is known as detailed auditing, and in fact, Cardwell devotes considerable attention to the application of statistical sampling theory in surveillance work, drawing heavily from Carman's article, "The Efficacy of Tests," which is reprinted in the appendix. He does, however, point out the surveillance value of many familiar audit techniques such as review of internal controls, tests of reasonableness, tests to prove recorded entries or to detect omitted entries, and comparison of account balances with an inventory of the items that are represented by the balances, but he stresses that the application of these procedures must be considerably sharpened in surveillance work.

Among the specialized surveillance techniques that Cardwell advocates are comparison of recorded cash receipts with periodic photographic records of checks deposited prepared by the bank or an independent intermediary; "split-control tests" to detect manipulations in detailed accounts receivable and accounts payable records without the necessity of detailed verification of account postings; verification of the payees of disbursement checks as a device to reveal fictitious payees; and positive identification of the authorized depository banks used by the payees of disbursement checks, as a means of detecting conversion of such checks by persons inside or outside the disbursing company. Other techniques that Cardwell develops at considerable length are oral inquiry of employees as a means of disclosing dissatisfactions, suggestions, and information about irregular conduct, and the scrutiny of handwriting and signatures.

Cardwell justifies his proposed surveillance activities largely on the basis that (p. 27) "The protection of society against the degeneration of individual and national character and against the financial loss from inside theft is one of the routine things—such as guarding against pestilences, cleaning streets, and fighting fires—that must be done if society is to be a good housekeeper." He makes no effort, however, to equate the social good or economic gain that might be achieved with the cost of those benefits, and while admittedly his

estimate of 250,000 persons who steal upwards of half a billion dollars each year offers a fertile field for surveillance activities, he makes no estimate of the reductions that might reasonably be expected. Lastly, Cardwell stresses the gain in acquainting internal auditors, independent auditors, controllers, and others with a knowledge of improved techniques of audit surveillance. Your reviewer heartily agrees and commends the book to all such persons who have any responsibility for the detection and prevention of inside theft.

HOWARD F. STETTLER
Professor

*The University of Kansas*

WILLIAM H. CHILDS *Accounting for Management Control*, (New York: Simmons-Boardman Publishing Corporation, 1960, pp. xvii, 714, $7.75).

This book is designed to serve a two-semester course in elementary accounting for business or non-business students. The aim throughout is to provide the student with a fundamental understanding of the accounting method, its usefulness and limitations, as it is employed to serve business management and outside parties having a financial interest in business enterprise.

In comparison to most elementary accounting texts its strongest points are the selection of topics so that a balanced emphasis is given to financial accounting and management accounting and the organization of these topics into a reasonably satisfactory sequence to provide a logical development of the subject for the student. Although occasional deficiencies may be noted, a substantial amount of integration is accomplished both in relating subject matter of particular chapters to relevant material which has preceded or will follow and in relating procedures and concepts to underlying financial accounting and management accounting objectives. Certain strengths and weaknesses in idea content appear in this book. Some of the strong points in idea content are:

1. The relationship of accounting to other quantitative disciplines in providing quantitative measurement in business is mentioned in the first chapter and illustrated at several appropriate points in later chapters.
2. The treatment of periodic adjustment of accounts is given early (Chapter 3) and is concisely and correctly stated.
3. The elements and the function of an accounting system are clearly explained. With the assistance of flow diagrams the steps in processing accounting data from documents to reports are presented and the relationship of certain procedures to internal control is emphasized. The system is related not only to the basic financial reports, the income statement and the balance sheet, but to other internal reports which are necessary to enable management to effectively conduct the affairs of the business. System reports, emanating from the accounting records with little change or rearrangement of data, are differentiated from analytical reports which require appropriate selection and interpretation of data.
4. Accounting classifications in corporate net worth are properly related to the nature of a corporation and its legal characteristics (limited liability and restriction on dividends) and to the need for information about the administration of retained income.

Some weaknesses in idea content are:

1. The terms "favorable" and "unfavorable" do not need to be associated respectively with "debit" and "credit."
2. In the chapter on "Fixed Assets and Depreciation" two weaknesses were noted. First, the principle(s) for costing fixed asset acquisitions were not set out before plunging into procedures. Second, while there is good discussion of the nature (causes) and methods of depreciation, the author gives no summary critical evaluation of the appropriateness of methods in different situations. Also, while the author attempts to maintain continuous attention to management control, in this chapter he does not clearly indicate how the setting of depreciation policy is related to various management needs.
3. In beginning the discussion of accounting for costs, insufficient attention is given to the significance of the *nature* of productive effort, that is, whether it is *essentially similar* or *essentially different* from one lot of work to another. Therefore, the implications of these characteristics for the selection of the basic types of cost systems (process and job order) are not developed and related to the features of usefulness and limitation of each type of system in serving the varied needs of management.

The author presents his material in a rather smooth and easy-to-read style. However, certain peculiarities and deficiencies in expression were noted. Some of these deserve comment.

1. "Intangibles . . . represent a right or a condition which enables a corporation to earn more than a normal return on the stockholder's investment." This may be a correct statement for some intangibles, but not for organization cost and prepaid franchises.
2. "Fundamentally, the choice of an inventory valuation method will depend on whether (1) the business desires to reflect the flow of goods or commodities in its costs, or (2) it wants to present an expendable cash income figure." The author's "expendable cash income" can be understood if his earlier explanation is remembered, but it would be better to use accepted terminology such as, "real income," or "income measure in terms of current replacement cost."
3. "The term 'replacement' may refer to the retirement or trade-in of an asset as a whole with the substitution of another to take its place. A more precise use of the term, however, is to designate the exchange of a worn-out part of an asset composed of interchangeable parts before the whole asset is discarded." Replacement does have several meanings, but one is not more precise than

another. It does not seem necessary to reconstruct customary terminology unless it is seriously in error or confusing.

4. In writing on process costing it is stated, "When more than one product is made the goods must have a common physically measurable characteristic which all costs may be presumed to vary." More careful writing at this point would have avoided the use of "all" and still have shown the need for an appropriate physical common denominator.

The problem and question material is rather limited throughout the text. There are a number of good critical questions in each chapter which should help create discussion revealing the usefulness and limitations of accounting for management.

The author's intent in presenting a number of flow charts throughout the book is to be commended since they are helpful in developing an integrated approach to the material at hand. However, since they are limited to 5 inches by 8 inches on one page they are too cramped to be developed effectively and so are difficult to follow.

The basic content and organization of this book are good and some parts are excellent. Occasional lapses and peculiarities in writing mar slightly an otherwise good exposition.

WILLIAM A. TERRILL
Professor of Accounting
*University of North Carolina*

ARNOLD W. JOHNSON, *Advanced Accounting*, Revised Edition (New York: Rinehart & Co., Inc., 1960, pp. vi, 545, $8.00).

The revised edition of Professor Johnson's *Advanced Accounting* is the third book of a three volume coordinated series. While it is directed according to the author "to the student who is preparing to enter the profession of public accounting, it is a book also intended to serve the practitioner as well—the individual who is in business as a public or private accountant."

As is usually the case, the book bears a strong resemblance to the original edition which was published in 1948. The arrangement and selection of the material are typical of standard texts in the area. The author discusses in order the following accounting topics: partnerships, joint ventures, home office and domestic branches, consolidated statements, foreign branches and subsidiary companies, consolidations and mergers, pro formal financial statements, statement of affairs, receivership, statement of realization and liquidation, and estates and trusts.

Professor Johnson has retained the chapter headings. The discussion material is basically the same as the first edition; however, there has been minor rewriting in some of the chapters and addition of current material, particularly, accounting procedures governing conditions of purchase and pooling of interests. There is an ample supply of illustrative problems and they effectively explain the accounting process. The major change is the addition of problems. The 232 problems of various lengths and degree of difficulty have been wisely chosen and are closely related to the text material. Of the total text material, the problems and illustrative problems constitute approximately 62%.

As is true of Professor Johnson's other texts, *Advanced Accounting*, Revised Edition, is written in a direct and simple style; the work is easy to read and understand. Although the explanations generally are brief, they cover the major points comprehensively and adequately and the author has done a superior job of emphasizing the important aspects. With the help of the illustrative problems, the student can develop techniques for handling the usual and difficult points and learn to solve problems effectively and efficiently.

The revised edition does not contain discussion questions. The addition of questions for assignment and discussion would improve the usefulness of the book as a teaching text. The book is excellent for professional minded students. It is useful for individuals preparing for the CPA examination and an excellent reference both for students and practitioners. A teacher will find it a challenge in attempting to lead classroom discussions. In general, *Advanced Accounting*, Revised Edition, is one of the better books in the field.

JOSEPH A. SILVOSO
Professor of Accounting
*University of Missouri*

DANIEL L. SWEENEY, *Accounting for Stock Options*, Michigan Business Studies, Vol. xiv, No. 5 (Ann Arbor, Michigan: Bureau of Business Research, School of Business Administration, The University of Michigan, 1960, pp. 228, $5.00)

In his introduction to *Accounting for Stock Options*, author Daniel L. Sweeney summarizes the accounting problem on stock options when he states that "the accounting controversy centers on the question of whether or not there is service cost and compensation present in the option transaction; and if they are present, how the amount is to be determined and how it is to be assigned to operating periods for matching against current revenue." After stating the problem, he goes on to say that "the purpose of this work is to bring together the available material on such options; to analyze it systematically in terms of (1) stated objectives and apparent objectives imputed from contractual provisions, and (2) action taken by all parties to the contracts; and then to draw conclusions as to what accounting procedure is appropriate to record the impact of this transaction in the corporate accounts."

To accomplish his stated purpose, Sweeney begins by examining the distinctive features of executive stock options and traces the development and use of this type of contract over the years. In this historical analysis the observation is made that statements in early stock option agreements recognized that the options had value to the recipient, that they were issued in consideration of valuable services to be rendered the corporation, and that some measure of cost was to be recorded in the accounts.

A further observation is that the principal factor affecting the use of stock options over the years has been

the treatment given them for Federal income-tax purposes. The low point was reached in the 1945 Supreme Court decision on the Smith case which was the basis for regulations taxing the price differential at the exercise date as ordinary income and permitting a deduction by the corporation for such compensation cost. The turning point occurred in 1950 with the enactment of Section 130A which imposed only capital gains tax rates on gains from sales of stock acquired under "restricted" stock options. Based on information filed with the Securities and Exchange Commission, 87% of the 654 executive stock option plans adopted during the years 1940 to 1955 were adopted after 1950.

The Federal income-tax treatment of stock options is covered extensively; included are summaries of important Treasury Department decisions and court cases that had an effect or that led to the present-day tax laws dealing with stock options.

The three accounting concepts that have been used at different times as the basis for measuring the compensation present in stock options are described and evaluated. In order of use, these concepts designated as the time of measurement (1) the date the option is exercised, (2) the date the option is exercisable or otherwise becomes the property of the optionee, and (3) the date the option is granted. The reasons supporting the adoption of each concept and the probable effect of the tax treatment prevailing at the time are most interesting. As to the present "generally accepted" concept that selects the grant date as the date compensation is to be measured, the author has this criticism to make "... the revised bulletin (Accounting Research Bulletin No. 37 (Revised); this bulletin is now Chapter 13, Section B of Accounting Research Bulletin No. 43) did not provide a realistic means for measuring and recording service cost, despite expressions of concern that the amount of service cost involved in stock options might be substantial, and that omission of such costs from the corporation's accounting might result in the over-statement of net income to a significant degree."

In the author's opinion there has not been adequate accounting disclosure of the stock option transaction in the financial statements. Several representative illustrations are given in support of his criticism.

After presenting his case as to the inadequacy of stock option accounting, author Sweeney offers the "cash-value-of-services concept" as a method of measuring the compensation element in stock options. This concept breaks down the transaction into two separate parts:

1. A compensation agreement in which a part of the total cash value of services is paid in cash, and the balance invested in the corporation under the stock option in lieu of a comparable payment in cash.

2. A subscription by the executive to a specified number of corporate ownership shares, with investment during the option period of executive services and a final fixed cash payment.

Under this concept the value of the services contracted for would be determined by the directors representing the corporation when the option agreement with the executive is negotiated. The value placed on these services to be rendered would be the cost to be charged against income over the period of the option. The author points out that the market prices of the stock at the exercisable date and the exercise date will be different from the sum of the option price payable in cash and the value of the services invested. He states that this difference represents the optionee's gain or loss on the investment of his services. The accounting entries required under the cash-value-of-services concept under various circumstances and a summary of the desirable features that should be incorporated in the stock option agreement are also covered.

This book makes a strong and convincing case that present "generally accepted accounting principles" for stock options are inadequate. It demonstrates that there is an element of compensation contemplated in the executive stock option transaction that is not being charged against income. The cash-value-of-services concept offered by author Sweeney appears to be a logical basis for determining such compensation cost. This concept should be given consideration by the accounting profession if there ever is to be more realistic accounting for stock options.

ROBERT F. KLUMPP, CPA

*Arthur Andersen & Co.*
*Chicago Illinois*

WILLIAM E. THOMAS, Editor, *Readings in Cost Accounting, Budgeting, and Control*, 2nd Edition (Cincinnati: South-Western Publishing Co., 1960, pp. x, 833, $7.00).

The first edition of this collection of readings appeared in 1955 and has since become widely used as supplementary material in courses in cost accounting and cost analysis. In his preface to the first edition, the editor explained that he had looked for a high quality of thought and expression in articles selected for inclusion, seeking material which was intellectually challenging—as any editor must—while avoiding topics covered at length in standard text-books. Relative inaccessability was also (rightly) to be regarded as commending items for inclusion as against those which students could come by more easily.

There is very little to be said about the second edition of this work which could not have been said about the first, for of the sixty-one items now included, fifty-five appeared in the earlier edition. Only two articles have been dropped from the 1955 collection, and these two have been replaced by others on the same or closely related topics. Thus Robert Tannenbaum's 1950 paper on "Managerial Decision-Making" is displaced in favor of one published in 1959 by Robert D. Calkins, President of the Brookings Institution, on "The Decision Process in Administration," while a 1959 paper by C. W. Bastable on "Base-point Labor Distribution" takes the place of an earlier one by Raymond H. Armor on "Accounting Treatment of Vacation Wages." Four other new items have been added. These are the "Tentative Statement of Cost Concepts underlying Reports for Management Purposes" prepared by the American Accounting Association's Committee on Cost Concepts and Standards, a 1958 article by Rolfe Wyer on "Learning Curve Techniques for Direct Labor Management," Joel Dean's

"Profit Performance Measurement of Division Managers," and Howard C. Greer's "Quicker Reports through Cost Planning and Control." The structure of the first edition has been retained in the new version, the material being arranged in four sections devoted respectively to background and theory, problem areas of accounting for product and period costs, problem areas of planning and control, and reports for management. However, as the editor himself points out, any such classification must involve a good deal of arbitrariness, for articles rarely fall neatly into one or other of these categories.

There is not much to support the editor's claim, referred to above, that he has favored items which are relatively inaccessible to students—at least to students of accounting. Of the sixty-one items reprinted, thirty originally appeared in NAA bulletins, nine in The Accounting Review, nine in *The Controller* and two in the *Journal of Accountancy*, while one is an extract from *Paton and Littleton* and one is an extract from *Accounting Research Bulletin No. 43* of the American Institute of CPAs. Fifty-two out of the sixty-one items, therefore, are drawn from sources which must be available in any accounting library, however small. This is of course not a criticism of the quality of these items. It does, however, raise somewhat serious doubts as to whether the collection makes as great a contribution to accounting education as it might have done. It cannot be said with much conviction that the student has been put in the way of literature which he could not easily have found for himself, though he has no doubt been saved some trouble in finding it. Challenging material in this field is not the monopoly of accounting publications. When, some years ago, I was myself engaged in editing a somewhat similar collection covering precisely the same area, a quite protracted search for a penetrating discussion on depreciation as a cost—a topic notably neglected in the Thomas collection, by the way—eventually led me to the Transactions of the American Society of Civil Engineers. It may be that Professor Thomas might have significantly enriched his collection if he had sought some of his material along less well-worn paths.

Such a search might even have taken him outside the confines of the United States; for it is conceivable that, even restricting himself to English language sources, he might have found one or two worth-while contributions in England, Canada and Australia or, as I did, in the English language versions of the Proceedings of one or other of the numerous international conferences concerned with the management field which are held these days with such frequency. However, there is nothing in Thomas's collection, not even an entry in the supplementary bibliographies with which the book concludes, to recognize that costing, budgeting and control are not the concern exclusively of American writers. That the general standard of the American literature on the subject is above that of the rest of the world is not for a moment to be denied. But other countries are not entirely bereft of talent; and it would at least have been salutary for American students of costing to realize that the matters dealt with in this book are the subject of thought in other countries besides their own.

Most of the articles reprinted in the present volume are undoubtedly worthy of any student's attention. In any case, detailed discussion of an editor's selection is apt to be rather unprofitable. But on one score the new edition of this book is open to criticism. The five years that have elapsed since the appearance of the first edition have been years of tremendous ferment in the management field. Management science has become firmly established, new methods of data processing have become widespread, statistics and accounting have at several points moved closer together. It must be said that there is no sign of all this in this new edition. Nor is there anything representative of the lively discussions of capital budgeting and project evaluation or of intracompany pricing which have occupied such an important place in the literature in recent years. I do not believe that the subjects of costing, budgeting and control have been as barren of developments during the last five years as might be judged from a comparison of the 1955 and 1960 editions of this book.

There is another small respect in which this new edition does not look as modern as perhaps it should. In the 1955 edition, the editor briefly mentioned, in a footnote to each article, the position then occupied by its author. It is somewhat surprising to find that these footnotes are unchanged in the 1960 edition, though there is nothing to warn the unsuspecting reader that many of the descriptions and locations of the contributors are now out of date. Any keen young reader who tries to write to Professor Billy Goetz, for example, about his article on "Tomorrow's Cost System" at Antioch College, as shown in the footnote, is likely to find that this was yesterday's address.

David Solomons
Professor of Accounting
*University of Pennsylvania.*

Tidwell, Sam B., *Public School Fund Accounting, Principles and Procedures* (New York: Harper & Brothers Publishers 1960, pp. xiv, 298, $7.50).

In the preface to this book the premise is advanced that "general accounting principles used in government are generally applicable to public school fund accounting." The author has drawn upon the source publications of the National Committee on Governmental Accounting published by the Municipal Finance Officers Association of the United States and Canada to demonstrate how the principles and procedures of accounting for municipalities apply to public school districts.

The book is divided into two sections. The first section consists of nine chapters. In the first three chapters the purposes, characteristics and general principles of public school fund accounting are presented in a clear and concise style. Emphasis is placed upon the role of accounting as "a valuable tool in the hands of the educational business administrator" when employed properly. The remaining chapters of Section 1 develop the basic accounting processes involved in the accounting cycle. Budgetary procedure and budgetary accounts are interwoven into the accounting cycle presentation.

Section 2 consists of thirteen chapters. The first eight chapters of this section illustrate the application of ac-

counting principles as found in various public school funds: general fund, special revenue funds, working capital funds, bond funds, bond sinking funds, trust and agency funds, general fixed asset group of accounts, and general bonded debt and interest group of accounts. The funds presented in this book follow the terminology recommended by the National Committee on Governmental Accounting rather than that recommended by the United States Office of Education. The stated purpose of this presentation is to use "fund terminology which is consistent in all areas of public funds." The last five chapters present material that should assist the public school official in his responsibility to "give an accurate accounting of all funds and property in his trust." The principal topics treated in the latter part of Section 2 are financial reports, internal control, payroll procedures and business papers.

In the foreword it was stated that this book was "written to be used as a basic accounting text for students of school business administration and . . . to serve as a handbook for local school districts in the United States and Canada." This book fills a need of public school administrators by presenting the application of accounting principles specifically to public school funds. For use as a textbook for students, the book will undoubtedly be deficient in one area. No problems or cases available have been coordinated with the text material.

THOMAS N. HUMBLE
Associate Professor of Accounting
*University of Alabama*

## *Finance*

HAROLD BIERMAN, JR. AND SEYMOUR SMIDT, *The Capital Budgeting Decision* (New York: The Macmillan Company, 1960, pp. vii, 246, $6.00).

With today's rapid technical and scientific development, careful planning of a firm's proposed capital expenditures is vital to holding competitive position. Since World War II, numerous articles have appeared on choosing capital expenditure projects but books integrating and summarizing capital budgeting theory and practice have been few. Hence this book attempts to fill a need.

It describes several methods of analyzing the value of proposed investments and recommends as best the so-called net present value method. The technique and advantages of this method are discussed and the influences of income taxes, business uncertainties and capital rationing on the final choice of proposed projects are described. Case studies, problems and thirty pages of useful tables complete the book.

Two sections of the book are basic to the authors' capital budgeting theory: Chapters 2, 3, and 4 dealing with measures of investment worth, and Chapters 10 and 11 with cost of capital. The conclusion reached is that the investment worth of a project can best be measured by finding the net present value, namely, the present value of the "proceeds" of the project less the present value of its cost. The discount factor used in finding present values is taken to be the cost of capital of the business.

The many unresolved problems and controversial points in the theory of capital budgeting are reflected in this book, as they are in most writing on the subject. A number of statements will meet with disagreement but there is room here to mention only two of these controversial phases of the subject: (1) the meaning and calculation of cost of capital, and (2) a basic assumption underlying the authors' view of finding investment worth.

Since cost of capital serves as the authors' discount factor in finding net present value and hence is basic to their capital budgeting theory, a clear definition and concise method of calculation of this measure would be expected. But the statement that cost of capital is "a weighted average of the cost of each type of capital" (p. 135), is an unsatisfactory definition since the word "cost" which is being defined appears in the definition.

Cost of capital is such a broad subject that it is not possible to deal adequately in a review with the theory presented in this book. However, two of the book's points on calculating cost of capital need critical consideration, one concerning the weighting process and the other concerning cost of common equity. In finding cost of capital, the authors use the frequently accepted method of taking a weighted average of costs for the several types of capital composing the financial structure. Does the result not give disproportionate weight to the cost of debt? The cost of debt not only appears directly in the averaging process, it appears again implicitly in the cost of equity since investor reaction to debt or lack of debt in a firm's capital structure is surely reflected in the stock's market price, upon which the cost of equity is figured.

The book's method of calculating cost of equity capital has its origin in Gordon and Shapiro's formulas for finding the "growth rate of profit" (dividend yield plus dividend rate of growth). The question arises whether dividends are an adequate basis for measuring cost of capital in the light of present investor attitudes. Since 1946 the public has become educated in "growth stock" investment with emphasis on earnings rather than on dividends alone. Therefore, would not some sort of earnings-price ratio be a more realistic indicator of cost of capital?

Another flaw in the book's cost of capital discussion must be pointed out. Although the concept is an integral part of the authors' capital budgeting theory, the reader is left with a feeling of uncertainty about the validity of the calculation in this statement (pp. 149–150): "The formulas presented . . . should not be thought of as ways of estimating a company's cost of capital. Rather they are possible frameworks within which the estimates might be made." Agreement is general about the difficulty of measuring cost of capital. But the reader may question whether in the face of this difficulty the authors should use cost of capital for so specific a purpose as a discount rate in finding net present values in choosing capital projects.

A second controversial phase of this book is its assumption that the cash inflow (net cash proceeds) from a project must be reinvested at the project's calculated rate of return in order to make this figure valid. This reviewer feels that the authors have not questioned this assumption. On page 39, referring to their example on page 38, Table 1, they state: "The value of the second year will depend upon what is done with the cash proceeds at the end of the first year."

This statement is explained by footnote 3: "The yield method implicitly assumes that proceeds are reinvested at the same return as the yield of the investments. The present value method implicitly assumes that the proceeds are reinvested at the cost of capital."

The significance of the above statements appears in the definition of proceeds on page 5 where it is stated that the definition of net cash proceeds differs from the accounting concept of net income: "The major difference is that in estimating cash proceeds, depreciation charges and other amortization charges of fixed assets are not subtracted from gross revenues because no cash expenditures are required."

Consistently, in the suggested forms for capital expenditure analysis (pp. 178–179) depreciation is excluded from expenses of production.

The above citations show that the authors include depreciation (capital recovery) in net cash proceeds and that thus, on their assumption that reinvestment is necessary to make valid the use of the present worth concept, they are assuming reinvestment of cash representing capital recovery. Yet it is generally understood (leaving aside the point about reinvestment of a project's earnings) that the present worth concept does not assume reinvestment of capital recovered. For example, C. G. Edge, a leading Canadian accountant, in his booklet, *Appraisal of Capital Expenditure*, published by the Society of Industrial and Cost Accountants of Canada, says, in discussing misconceptions of the investors' yield method (p. 15): "The discount method assumes that the capital recovered has to be reinvested to enable the return to be earned. This is not correct as the discount methods are based on earning a return on the outstanding balance of the original expenditure. No reinvestment of funds set free is needed." An example supports this statement.

While this review may seem excessively critical, it must be remembered that many specialists would find numerous points of disagreement in a book on this subject. On the whole, *The Capital Budgeting Decision* should meet with approval because it moves in the right direction in its emphasis on the present worth approach. It should be read by business executives and anyone else interested in capital budgeting. Its recommended procedure, in spite of criticisms noted, would improve capital expenditure judgments in most business organizations.

John A. Griswold
Professor of Finance

*Dartmouth College*

Cedric V. Fricke, *The Variable Annuity, Its Impact on the Savings-Investment Market* (Ann Arbor: Bureau of Business Research, The University of Michigan, 1959, pp. xi, 90, $5.00).

Little has so far been published in the field of variable annuities. Professor Fricke's slim volume, *The Variable Annuity, Its Impact on the Savings-Investment Market*, condensed from a lengthier doctoral dissertation, is therefore a welcome addition to the literature. Its original and thought-provoking analysis is likely to be cited by other authors for some time to come. One need not agree with all the specific projections and conclusions of Professor Fricke to recognize that he has made a solid contribution by coming to grips with an important issue, often raised but rarely answered: What will be the effect of variable annuities on the demand for equity securities and upon the resultant prices of common stocks?

A variable annuity is a contract guaranteed to provide a *lifetime* income upon retirement—based upon an actuarial application of mortality tables—with benefits varying according to the asset value of a portfolio of common stocks and other equities. The essential distinction between a variable annuity and other equity type savings is that a variable annuity consumes the principal uniformly over a lifetime.

Extensive historical studies, particularly those of the Teachers Insurance and Annuity Association (which began issuing variable annuities to college teachers in 1952 through its College Retirement Equities Fund), have shown that a variable annuity, appropriately balanced by a fixed dollar annuity, would have provided a high degree of protection against the declining purchasing power of the dollar. While it is not expected that a balanced variable annuity retirement program will keep purchasing power exactly constant year in and year out, such a program at least stands a good chance of moving reasonably in line with long-run changes in the cost of living. Because a typical retirement program usually stretches over many decades, first of accumulating savings during a working life and then liquidating these savings during years of retirement, protection against the inroads of secular inflation becomes a particularly important consideration.

But the justification for variable annuities does not rest solely on the likelihood of a continuing inflationary trend. Even if inflationary forces should abate, variable annuities would give retired persons some prospects of sharing in this country's expanding economy and rising standard of living. The principle of variable annuities has been adopted by a number of trusteed pension plans, by the College Retirement Equities Fund, and by a few smaller insurance companies now selling the contract under both State and SEC regulations. Other insurance companies, including the Prudential Insurance Company of America, are now making preparations for their sale to the public.

In analyzing the probable impact of variable annuities on the equity markets, Fricke is under no illusion about the precision of his estimates. He disclaims any pretensions to a high degree of accuracy for his forecasts. He recognizes that the validity of any of the assumptions on which his projections are based is open to question. For example, will the growth pattern of

variable annuity contracts follow the historical growth patterns typical of earlier contract innovations in the insurance field? Will sales during the first year be equivalent to 1,000 policies to each age group 31 through 50, with annual annuity payments of $1,000? Obviously, any projection will raise questions of this sort. But Fricke stresses that "a precise forecast is not necessary for the problem at hand, i.e., to determine whether the demand for the variable annuity will be so big as to disrupt the economy or merely big enough to constitute formidable competition to mutual funds and stock brokers."

While the rate of growth of the accumulated variable annuity funds is likely to be high for the first few years, the sums involved are likely to be small. By 1975, however, Professor Fricke foresees net annual contributions to variable annuity funds totaling $1.1 billion, with accumulated assets of $6.2 billion. To gauge the significance of these figures, it is necessary to determine how much of this demand will represent a shift to variable annuities from other institutions investing in equities and how much will represent a genuine net new demand. The author estimates that of the $6.2 billion accumulated in variable annuity accounts by 1975, 40%, or $2.5 billion, will result in a net addition to the demand for stocks.

To set this figure in perspective, the author projects the total new demand for stocks by all institutional investors over the next fifteen years. Relying primarily on modified trend projections of the stock holdings of major financial intermediaries, he arrives at total holdings of stocks by insurance companies, pension funds, investment companies, and personal trust departments of $254 billion, or a net increase of $170 billion over their 1956 holdings. Clearly the demand for equities resulting from variable annuities promises to be only a tiny fraction of the new demand of all institutional sources—too small a proportion to cause any real concern.

To bolster his findings, Fricke also projects the probable increase in the *supply* of equities in the years ahead. Using three methods of projection, he estimates the market value of all outstanding stocks at $525 billion at the end of 1975. This figure compares with his fifteen year projection of $254 billion for total institutional holdings, and $6.2 billion for variable annuities (of which only $2.5 billion is expected to represent new demand). Even if the author's variable annuity estimate were as much as 100% off the mark, his major conclusions about the insignificant effect of variable annuities on the equities market would hold.

In Chapter 7 the author includes an historical study of the market effect of specific institutional purchases of stocks where these represented a larger proportion of the available shares than in the projected variable annuity purchases. Both the Sears Roebuck profit sharing fund and the General Motors bonus plan did not affect either the short- or long-run prices of their stocks.

At the risk of stealing the punchline, it is worth repeating here the succinct statment of conclusions with which this rewarding book ends: "Even though an industry-wide sales program for the variable annuity may begin in 1960, the variable annuity companies will remain an insignificant institution with respect to other financial intermediaries and the securities market until at least 1975.

"The accumulated funds of the variable annuity in 1865 will amount to $0.4 billion, which is extremely small when compared to funds of other institutions. Although the fund will reach $6.2 billion in 1975, it will still represent only 2.4 per cent of all institutional investment in equity securities.

"The analysis of Chapter 7 points out that an institutional investor does not influence the price of stocks even if it accounts for 25 per cent of the stock traded on the exchanges. It is highly improbable that the $11 billion in purchases to be made by variable annuity companies in 1975 will represent 25 per cent of stocks traded during that year. Therefore, we may conclude that the variable annuity will not influence stock prices between now and 1975."

WILLIAM C. FREUND
Assistant Director of Economic
& Investment Research
*Prudential Insurance Company of America*

DAVID F. JORDAN AND HERBERT E. DOUGALL, *Investments*, Seventh Edition (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1960, $10.60).

This revision represents the seventh edition of a widely used text. Coverage of material is up to date and very extensive. Included, for example, is a timely chapter devoted to an analysis of foreign securities. Other topics covered of particular importance are pension funds, variable annuities, tax-exempt securities, investment companies, and taxation of investments. There is also analysis of real estate investments, investment banking, public utility and railroad securities, bank and insurance company stocks, United States government securities, and the mathematics of investment.

Attention will be focused on chapters 16 and 17, "Investment Principles," and chapters 21 and 22, dealing with industrial securities. The philosophy presented is eminently sound: (1) investors are warned to avoid attempts to "guess the market" or to predict changes in interest rates; (2) the "purchasing power" risk of dollar contracts is emphasized; (3) "a determination of the investor's goals and objectives" is mandatory; (4) diversification and careful selection of common stocks are essential ingredients; (5) and common stocks can be appraised only within a range of possible values.

Certain features of the discussion of common stock selection deserve special attention. It is properly noted (p. 259) that "the price at which a security is to be bought (or sold) is as important a decision as the selection of the security itself." But, in the opinion of the reviewer, the authors do not adequately explore the crucial concepts involved in common stock valuation. The following observations are pertinent: (1) the discussion of the relation of the "riskless rate" to the "earnings yield" is not clear, although it is suggested (p. 342) that the former should be 50% of the latter for the "average" stock; (2) the capitalization of estimated "5-year average future earnings" at certain rates (depending on growth prospects, quality of management, etc.) does not do the job. This is admitted to be a "rough" ap-

proach. Some analysis of specific factors likely to affect future revenues and revenue deductions for the particular firm (present or planned plant expansion, scope and quality of research activities, labor problems, etc.) would have been a worthwhile addition here. (3) On p. 351 is presented a tabulation (1935–1958) of "net earnings of leading manufacturing companies"; figures are shown for unadjusted rates of return on book net worth, profit margins, etc., and the authors discuss briefly the "profit squeeze" of the last decade. But the relation of these data to the valuation and selection process is not clarified. The sharp post-war advance in the level of common stock prices is to a considerable extent a reflection of increasing price-earnings ratios. But will investors continue to regard common stocks as highly in the future, in an environment of increasing costs, rugged competition, and government interference? The authors venture no guesses on this question.

The reviewer is disappointed to find that the discussion of accounting concepts includes such terms as "surplus" and "net worth." More important, the effect of price level changes on the measurement of the depreciation deduction and the plant accounts is ignored. This is a significant although by no means unusual omission. And it is erroneously stated, p. 19, that "depletion and depreciation allowances, while not savings in the technical sense, also provide funds for replacement and expansion."

Other brief comments are as follows: (1) the chapter on mathematics of investment might well have preceded the discussion of bonds; (2) convertibles need a bit more emphasis in view of the importance of this type of of investment package; (3) the authors properly attach little significance to splits and "stock dividends"; (4) the chapters on railroad and public utility securities are particularly good; (5) some performance figures for selected investment companies would serve to reinforce the statement (p. 460) that "a cold-blooded inspection of the records of American investment companies reveals that some of them have fallen far short of the results expected of expert management"; (6) the inclusion of the Dow theory in a chapter "Investment Principles" seems unfortunate; (7) the chart (p. 22) showing "New Corporate Securities Offerings, 1945–1958" is a vivid reminder of the post-war dearth of new common stock capital; this point is not adequately emphasized by the authors.

This book is well written and includes all the elements of sound long-term investment philosophy. It represents a continuation and expansion of the excellent workmanship exhibited in previous editions.

William A. Paton, Jr.

*University of Michigan*
*(Flint College)*

Ezra Solomon, Editor, *The Management of Corporate Capital* (Glencoe, Ill.: The Free Press, 1959, 327 pp., $7.50).

This, the first in a new series of Studies in Business Administration, is a publication of the Graduate School of Business at the University of Chicago, where the editor is Professor of Finance. The volume includes an introduction by the editor and twenty-two articles on various phases of capital budgeting. Fifteen of these articles first appeared in journals sponsored by that University; nearly half of the total show the handiwork of present or former members of that faculty.

The collection of essays is, however, far from a provincial one. The quality of ideas is high, their presentation is effective and clear; the coverage is broad. Eight of the articles deal with the measurement of investment worth; six are concerned with measurement of the cost of capital; two are addressed to the problem of optimization of capital-investment decisions; the rest discuss special questions, such as residual values, abandonment decisions, administrative procedures, and special purpose formulae. The book also contains tables for compound discount factors (1–40%, 1–25 periods), for commuted annuities related to the same rates and times, and for comparisons of continuous and annually compounded interest rates, (5, 10, 15, and 20%) over various terms (1, 5, 10, 15, 20, and 25 years). There is an extensive bibliography, classified in a fashion similar to the arrangement of articles in the book.

The title of this volume, and the arrangement of articles, might suggest that it is a kind of businessman's rule book, with appropriate formulae and specifications for quantifying and solving typical investment problems. Very little material of this sort appears in the presentation. Rather, the volume is a thought starter; it presents an intellectual fare at a sophisticated level; it deals with issues of basic importance, putting emphasis upon critical analysis rather than prescription or formula. Of evaluation and discrimination there is much; of specific application there is less; and of definitive and final answers there are few. Some of the articles are paired, to present different aspects and positions on issues to which there are as yet no final solutions. Indeed, the review copy of the book contained a slip calling attention to the fact that one of the spirited discussions was carried further, but not included because of the press deadline. There are, doubtless, other issues still further to be debated; but this volume at least starts the reader down the path of study and reflection that may lead to understanding, if not solution of problems.

The businessman—and this will include a large number of accountants—will find some of the materials in this book to be rigorous, slow, and even tedious reading; occasionally, he may find himself in a strange new world, unfamiliar, forbidding, full of doubts and uncertainties. However, the "natives" who will attempt the introduction to this new environment are not unfriendly; an encounter with them may be refreshing, stimulating, and helpful, despite the strangeness of their language, the sharpness of their weapons, and the gaudiness of their literary attire.

William J. Vatter

*University of California*
*Berkeley*

AMERICAN ACCOUNTING ASSOCIATION

*Announcement of*

# FELLOWSHIP PROGRAM IN ACCOUNTANCY

FOR ACADEMIC YEAR 1961–1962

PURPOSE

The purpose of the fellowship program is to increase the supply of qualified teachers of accountancy in the United States. Fellowships will be awarded to assist individuals in furthering their preparation, through doctoral studies, for teaching in colleges and universities.

ELIGIBILITY

1. Expressed interest in and outstanding promise for a career in teaching accountancy.
2. A master's degree or equivalent in accountancy, business administration, or other relevant areas.
3. Recommendation by the institution at which the applicant is currently in residence, the university at which he has begun the doctoral program, or the university which awarded the master's degree.
4. Need of financial assistance.
5. United States citizenship.

AMOUNT

The amount of the fellowships will generally range from $500 to $1,500 for the academic year.

DURATION

Fellowships will be granted for one academic year, with the possibility of renewal, upon application, for one additional year.

FIELD OF STUDY

The doctoral program is expected to be in accountancy or in another area suited to preparing the applicant for teaching accountancy.

SELECTION OF INSTITUTION

The recipients may use the fellowship at any university in the United States which offers an appropriate doctoral program.

PAYMENT

Payment of the fellowships will be made to the recipient, in equal installments at the beginning of each semester or quarter.

CLOSING DATE

The closing date for receipt of applications and supporting data is March 1, 1961. Awards will be announced on or about April 15, 1961. Requests for application forms should be addressed to:

PAUL H. WALGENBACH Secretary-Treasurer
American Accounting Association
School of Commerce
University of Wisconsin
Madison, Wisconsin

ADMINISTRATION

The program is administered by a committee composed of the three immediate past presidents of the American Accounting Association.